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TREATMENT OF DISEASES

OF THE

HEART AND LUNGS,

WITH OVER

THREE HUNDRED AND FIFTY FORMULÆ AND

ERRATA IN FORMULARY.

On page 81, *Read:* Syrupi Senegæ, ʒ i.

On page 153, last line, *Read:* Dose, at bedtime, to a child of ten years.

BY

CHARLES H. GOODWIN, M. D.

SECOND EDITION, REVISED.

NEW YORK:

C. H. GOODWIN, M. D.,

245 WEST 53D STREET.

1883.

PRICE, $1.50.

TREATMENT OF DISEASES

OF THE

HEART AND LUNGS,

WITH OVER

THREE HUNDRED AND FIFTY FORMULÆ AND PRESCRIPTIONS,

AS EXEMPLIFIED IN THE

HOSPITALS OF NEW YORK CITY:

BELLEVUE, NEW YORK, CHARITY, ROOSEVELT, PRESBYTERIAN, ST. FRANCIS', ST. LUKE'S, GERMAN, MT. SINAI.

IN THE SERVICES OF

DRS. ALONZO CLARK, AUSTIN FLINT, ALFRED L. LOOMIS, E. G. JANEWAY, W. H. DRAPER, F. DELAFIELD, W. H. THOMSON, A. JACOBI, J. R. LEAMING, A. H. SMITH, BEVERLY ROBINSON, J. LEWIS SMITH, G. G. WHEELOCK, J. H. RIPLEY, F. H. BOSWORTH, A. C. POST, A. A. SMITH, etc., etc.

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PREFACE.

The author believes he is correct in stating, that among the numerous medical works there is no book which places before the physician the real practical hospital-treatment of disease: treatment which, founded on daily experience of the leading medical men of the times, and in the great wards of metropolitan hospitals, necessarily represents the latest, most approved, and most successful methods.

A certain number of medical gentlemen, from various parts of the country, visit this city each year, at no little expense and loss of time, for the purpose of attending these hospitals and acquainting themselves with the views of the prominent and recognized authorities connected therewith. How valuable such information proves to them is evident to all, and beyond question. This practical knowledge the author has endeavored to place before the profession.

The present volume contains a résumé of the treatment of the several diseases of the lungs and heart, as exemplified in the various hospitals of New York City. It is hoped that the many imperfections, of which the author is only too conscious, may be dealt lightly with, and that the work may prove a useful one to the practitioner.

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PART I.

DISEASES OF THE LUNGS.

PNEUMONIA.

DEFINITION.—Inflammation of the substance of the lungs, which, in its typical form, runs a definite course, characterized by sudden invasion of the usual symptoms of inflammatory fever, attended with a rapid and considerable elevation of temperature which maintains its height until a period between the fifth and eighth or tenth day, corresponding to commencing convalescence, when it may as suddenly fall, while the local lesion is still at its maximum of intensity. The course of the disease is, moreover, modified by the general condition of the patient and by complications.

There is perhaps no disease, at the present day, the treatment of which has been, and is, attended with more diversified plans, each of which, moreover, has its own measure of reputed success. Bleeding, the calomel treatment, tartar emetic, quinine, alcohol, the cold pack, etc., are all employed. Again, in contradistinction, some regard all medication as

of little or no significance whatever. In support of this latter view, rapid and complete recovery has been observed in cases, severe as well as otherwise, double pneumonias as well as single, where, without the administration of a particle of medicine, the treatment has been simply good nursing, perfect rest, and careful feeding. That each method, however, is not applicable to all, but is peculiarly serviceable in certain cases, or in certain conditions, there can be no question. Calomel has saved life when every other possible effort had failed. Blood-letting would hardly be employed at the onset in an elderly or asthenic patient. Cold would not be applied injudiciously.

Believing this, then, does it not follow: that while the various plans of treatment are, all of them, severally useful, none are specific; no one must be considered as sufficient, or, on the other hand, required in every case of whatever nature; but that the particular adaptation of each resort, and its serviceability, depends essentially upon the indications called for and the conditions existing in each individual instance; and that every measure has proven, and does possess, its own value, every means its own degree of merit, when suitably applied and with discrimination.

BELLEVUE HOSPITAL.

Before proceeding to the more detailed remarks the treatment adopted at this hospital will be considered first from a general standpoint.

No routine plan is employed for all cases. The patient is placed on a good nourishing diet, consisting usually of milk and eggs, and absolute rest in bed in the recumbent position enforced. The general indications for treatment are to sustain the vital powers and to keep the temperature within due bounds until the disease has run its course. To fulfill the former, stimulants are administered, the pulse being considered as the best indication of the powers of resistance; an increase in its frequency and diminished force requiring stimulation. For this purpose *whiskey*, ℥ss. *every three hours*, is usually given, alternating or in conjunction with *ammonium carbonate*, *grs. v. every three hours*, according to indications. *Digitalis* is also used considerably for this object, and in some instances *camphor*. If there is much pain present, morphine is given to relieve it; or sometimes a coat of iodine is ordered. Occasionally the oil-silk jacket is applied. If the patient is seen at the onset of the disease, *aconite* is given in some instances. Spirit of mindererus, sweet spirit of nitre, *calomel*, and Dover's powder are also used at times in the early stage. For the high temperature quinine is very generally employed, usually beginning with *quiniæ sulph. grs. x–xv. thrice daily*, and increasing or diminishing the amount according to the fever. Or, when met in the first stage, *grs. xx. of quinine* are given, followed by doses of grs. x. three times daily.

For hypodermic administration, the following solution is often employed at this hospital:

℞. Quiniæ sulph. . . . grs. lxxx.
Aquæ . . . . fl. ℥i.
Acid sulphur. dil. . q. s.
Heat to boiling, and add:
Acidi carbol. . . grs. v.
M.

In some cases the sponge-bath is used in combination. When the temperature rises to 102° or 103°, a sponge-bath occupying fifteen minutes is given, and repeated as often as necessary; with this, *quiniæ sulph., grs. xv–xx.* are administered internally and often very effectually. In many instances, however, *cold* alone is employed, in the form of the wet-pack. When cough is very distressing, the hypodermic injection of *sol. morphiæ sulph.* (*Magendie*), *M. v–viii*, generally affords relief. If there is much laryngeal cough and pain, poultices applied to the neck are found very serviceable. When the dyspnœa is marked, with a sense of suffocation, quebracho is often of great benefit; also in some cases associated with pleurisy, where the respirations are quick and very labored, two or three doses have given relief lasting for several hours. It is administered thus:

℞. Ext. quebracho fl. . . . ℥ss.
Sig. Dose, every three or four hours, or p. r. n.

Should pulmonary œdema develop, rapid and repeated dry cupping is applied, and *tincture of digitalis gtt. x–xx.* given, together with *ammonium carbonate*, and *whiskey, in doses of ℥ss.* hypodermically. These measures are repeated if the œdema returns. In other cases wet cups are used, drawing

blood to ℥ *x–xii.* Or sometimes the hot-pack and oxygen are resorted to.

When the heart's action is strong and the pulse rapid,

℞. Tinc. aconiti rad. . . . gtt. i.
Aquæ q. s.
M. Sig. Dose, every hour.

is given until its effects begin to be manifest. In certain instances *bleeding* is employed in the early stage. In young sthenic patients where the full effect of the febrile movement is shown by a full, strong pulse, restlessness, and a tendency to delirium, it is believed that quinine is not needed ; general blood-letting is often resorted to, and the entire condition of the case made more comfortable. Or, the patient is put under the influence of aconite, as above, combined with small doses of opium, with the same beneficial effect.

In mild cases, where the only indication for treatment is a feeble pulse, whiskey is given in ℥ ss. doses every one, two, or three hours as demanded. This, with a milk diet and absolute rest and quiet in recumbency, is all that is required. Or, where the general condition of the patient is good, vital signs good, and no special call for medication, the patient is simply ordered a diet of milk and eggs, combined with rest in bed. No medicinal treatment whatever is employed. In others, morphia may be needed to relieve the pain, and digitalis for the heart.

In more severe cases, where the previous condition of the patient has been bad, and there is much dys-

pnœa, with cerebral symptoms, dry tongue, and high fever, stimulants are given as required, together with *quiniæ sulph., grs. xx-xl.*

Morphia is also administered for the pain, and Hoffman's anodyne, or sweet spirit of nitre, with digitalis for the heart's action. If the pulse becomes very weak and irregular, and cardiac failure is imminent, *ammonium carbonate, grs. v.* are immediately given, alternating every fifteen minutes with *spts. frumenti*, ℥ *ss.*, and repeated as necessary.

Owing, however, to the previous bad habits and poor condition of many of the patients, the treatment of pneumonia often resolves itself into treatment of the exhaustion, œdema of the lungs, etc. Many cases are similar to the following. The patient is a tolerably healthy man in the early stage of the fever, with a temperature of 104°, and respiration 50; pulse good and condition quite comfortable. A milk and egg diet is ordered, together with *quinine, grs. xv.* This corresponds to the morning. During the afternoon the patient grows weak, slightly cyanosed, and respiration is accelerated. Moist râles, both coarse and fine are heard, and œdema is beginning to develop. Dry cups to the number of one hundred or more are at once applied, and the œdema disappears. The following is administered: *Tinct. digitalis, m. x. every three hours*, and *whiskey* ℥ *ss. every two hours;* together with milk and eggs. Under this treatment the patient improves, until toward evening, when the œdema again appears. Cupping is resorted to, and *ammonium carb., grs. x.* given every

two hours, alternating with the whiskey, and the œdema is again relieved. Inhalation of oxygen is also ordered for the night, to be inhaled fifteen minutes during every hour. This relieves the dyspnœa, but toward morning the cyanosis and œdema recur. Cupping is again applied, and *whiskey*, ℥ ss. *every hour*, administered, alternating with *carbonate of ammonium*, *grs. x. every hour*.

By this means the patient is carried through the night, and in the morning feels much easier. Milk and eggs are still given. The patient is not allowed to sleep continuously at any time, for it is during sleep that the œdema shows itself. Thus, by prompt and energetic measures, continued as often as indicated, the greatest reliance being placed on whiskey, milk, and dry cupping, the crisis is not infrequently tided over. If, however, the case becomes still worse, various means of treatment are resorted to. Other forms of ammonia are used; hypodermic injections of *camphor* dissolved in sweet oil are given every three hours in doses of grs. iv. If persistent œdema is present, with a full pulse, *blood-letting* is practiced, and is of excellent service when digitalis and cupping fail. Hypodermic injections of *ether*, up to ℥ i-ii, sometimes bring up the pulse. *Champagne* given in doses of ℥ i every five minutes is of service in the crisis. Stimulation has its limit; if ℥ ss. doses of whiskey repeated every half-hour has no effect, there is no benefit derived by increasing the amount, unless an alcoholic preservation of the stomach is desired at the autopsy.

In complicated cases where the pain and constitutional symptoms are severe, and the vital signs show high temperature with frequency of pulse and respiration, the treatment is necessarily of grave importance. The following is an interesting illustration, because of the severity of the case and its complications.

The patient, æt. 14, in previous good health, was admitted to the hospital on the 20th., with pulse 145, respiration 48, and temperature 105¼°. The attack was sudden, sharp, and the constitutional disturbance very marked. Face flushed, respiration panting with moaning, and pain in the side intense. Cough painful, and sputa viscid but not rusty. Consolidation was present in the lower lobe of the right lung. The indications for treatment were considered to be to sustain the vital forces and to relieve the pain.

℞. Sol. morph. sulph. (U.S.P.) . ℥ ss.
Spts. frumenti . . . . ℥ ii.
Sig. Dose.

were given, and the patient placed on a milk diet with absolute rest in bed. The pulse shortly afterward fell to 120, and the respiration to 44. At 5 P. M., the following was administered:

℞. Tinct. digitalis . . . . m.v.
Spts. frumenti . . . . ℥ ii.
Sig. Dose.

At 6.30 P. M., the pulse was 120, and respiration 42. Whiskey and morphia repeated as above, with milk. 8 P. M., P. 104, R. 40, T. 105.°

℞. Spts. frumenti . . . . ℥ ii.

Sig. Dose, every three hours.

given with milk. 10 P. M., P. 120, R. 40.

21st.—A. M., P. 123, R. 44, T. 104.5°. Patient complains of pain, and moans with each respiration unless kept under the influence of morphia. Takes milk freely and does not vomit. Whiskey continued, as above, every two hours. 12 M., P. 130, R. 36. 2 P. M., P. 130, R. 40. 3.15 P. M., P. 120, R. 38, T. 105°. Complains of pain, and ℥ *ss. of morphia solution* (*U. S. P.*) given. 5 P. M., P. 122, R. 42. 7 P. M., P. 109, R. 40. Patient somewhat delirious. Administered *sol. morph. sulph.* (*U. S. P.*), ℥ *i.* 10 P. M., P. 112, R. 34. Patient asleep and perspiring.

22*nd*.—7.30 A. M., T. 104.5°. Ordered:

℞. Spts. frumenti . . . ℥ ii.
Spts. ammon. aromat . . gtt. x.

Sig. Dose, every two hours.

9.20 A. M., P. 120, R. 48. Patient takes milk and eggs freely. *M. v. of Magendie's solution* given hypodermically. 2 P. M., P. 120. R. 35, T. 103.5°. Ordered:

℞. Spts. frumenti . . . . ℥ ii.
Tinct. digitalis . . . . m.x.

Sig. Dose, every two hours.

and hypodermic of Magendie repeated. 4.35 P. M., P. 128, R. 32, T. 103°. 8 P. M., P. 120, R. 33, T. 103°. *Whiskey* and *aromatic spirits of ammonia* given every hour. Ice and carbonic acid water *pro re nata*. 9. P. M. Retention of urine and catheter employed. P. 118, R. 34. Morphine to relieve the pain.

23rd.—3 A. M., P. 112, R. 36. Tongue dry and patient rational. Injection of Magendie repeated for the pain. 7.30 A. M., P. 109, R. 33, T. 103¼°. Urine drawn by the catheter. 10 A. M., P. 128, R. 30. First appearance of rusty expectoration. Pain in the side intense. Examination revealed invasion of the upper lobe, with consolidation at the apex. 2.30 P. M. Pulmonary œdema developed. Dry cups freely applied with considerable relief, and the following administered:

℞. Spts. frumenti . . . ʒ ii.
Tinct. digitalis . . . m.x.
Spts. ammon. aromat. . . gtt.x.
Sig. Dose, every half-hour.

(The ammonia was given to prevent, if possible, the formation of heart-clot). 4.30 P. M. Physical signs of œdema disappeared. Pulse 115. Whiskey, digitalis and aromatic spirits of ammonia repeated every hour. 7 P. M., P. 130, R. 35. Patient complains of severe pains in the side.

℞. Sol. morph. sulph. (Magendie) . m.v.
Tinct. digitalis . . . m.viii.
Sig. Dose, hypodermically.

administered; also an enema which produced free evacuation of the bowels and of the bladder. 8.30 P. M. Slight pulmonary œdema present, and m. x. of *tincture of digitalis* given hypodermically; also, *sol. morph. sulph.* (*U.S.P.*), ʒ i by the mouth. 10.30 P. M. Evidences of œdema disappeared, and respiration 34.

24th.—1 A. M. Tincture of digitalis repeated. 3 A. M., P. 120, R. 29.

No signs of œdema. Ordered:

℞. Tinct. opii . . . . m.xxv.
Tinct. digitalis . . . m.x.
Sig. Dose.

5 A. M. Digitalis repeated. 7.40 A. M., T. 104°. 8 A. M. Digitalis repeated. 9 A. M., P. 118, R. 32. No pain.

On the following day the patient improved, and was convalescent in one week; the succeeding treatment consisting chiefly in the administration of nourishment and a moderate amount of alcoholic stimulants.

DR. ALONZO CLARK varies his treatment according to the general condition of the patient. In all cases the importance of rest in bed is insisted on. During the first four days the diet should not be forced; after that period he advises good, nourishing food to support the strength for the resolution and prostration. Regarding medication, he finds that many do well on no treatment whatever. In the early stage of pneumonia, in certain cases, where the patient has been previously healthy and robust, but never, in any case, after the fifth or sixth day, he practices *bleeding* to the extent of from ℥ iii–iv to ℥ x–xii. In doing this he is accustomed to using cups, after scarification, drawing ℥ iii-v of blood from the affected side. DR. CLARK is not partial to *cold* as an antipyretic, and strenuously objects to the application of ice to the chest. In some instances he allows

the cold sponge-bath, or a bath at a temperature twenty degrees below that of the patient's body; a bath of 80° cooled down to 75°, but no lower. As a rule, however, he considers the administration of quinine the safest plan, given in full doses: usually commencing in adult cases, with:

℞. Quiniæ sulph. . . . grs.x

Sig. Dose, three times daily.

This amount, he finds, almost invariably controls the high temperature, and exhibits about all the power of the bath or other external application.

Dr. Clark also resorts to other means of medication according to the demands of each particular case. A gentle sweating is sometimes induced by means of the oil-silk jacket, with flannel beneath and over it. *Aconite* is also employed by him with a view of reducing the frequency of the pulse and the body heat. *Veratrum viride* is considered unsafe; his objection being that when administered with any degree of freedom, it is very apt to lead to collapse. He occasionally, though rarely, uses *tartar emetic in doses of gr.* $\frac{1}{8}-\frac{1}{6}$, just sufficient to cause a little nausea, and dew on the forehead. As regards *calomel in large doses*, it is not a favorite with him, on account of the disastrous effects on the teeth. In one particular instance, however, he accords the saving of life to the free exhibition of this drug, as follows:

℞. Hydrarg. chlor. mit. . . . ʒi.

Sig. Dose.

This was repeated three times in the course of the day, and followed by three or four doses of ℈i. each.

Regarding alcohols, DR. CLARK does not place much reliance upon them. As an antipyretic, he considers *alcohol* of but little value. Should the pulse become frequent, small and feeble, a milk punch may be given; although, at that stage, when the respiration is obstructed to such an extent that alcoholic stimulants are called for, he thinks their benefit but temporary and not of sufficient amount to enable the patient to recover. If, however, the typhoid condition comes on, he administers alcohol with marked service.

In pneumonia occurring secondarily, his treatment is altogether supporting; sustaining the patient with tonics, and, if indicated, alcoholic stimulation from the onset of the disease. Bleeding, either by cups or leeches, is of course contra-indicated.

In chronic, or interstitial, pneumonia he orders that the medical and dietetic treatment be made in the highest degree nourishing. The patient must be encouraged to take all the food that the stomach can digest, and the strength otherwise supported by tonics, freely administered. He also resorts to *counter irritation* with iodine. Upon the affected side of the chest, over a space as large as the palm of the hand, a coat of iodine is applied until the part becomes painful; then another adjoining spot of about the same size is selected, this followed by a third, and so on. Each particular spot is painted twice daily for three days, when he usually finds that it has become sufficiently irritated.

The following is an excellent combination which, as a tonic, is often used at this hospital:

℞. Quiniæ sulph. . . . . gr. i.
Strychniæ sulph. . . . gr. $\frac{1}{32}$.
Ferri phosphat. . . . . gr. ii.
Syrupi . . . . . fl. ʒ i.
M. Sig. Dose.

Dr. Loomis has no established plan of treatment. In many instances he finds that rest in bed, with a nutritious diet, consisting of milk, eggs, etc., is all that is needed. A hypodermic of morphia may be given for the pain. In severe forms of the disease, however, he has resort to other measures. For the high temperature, in the first stage, he places the most reliance upon quinine, as follows:

℞. Quiniæ sulph. . . . gr. xx–xl.
Sig. This amount daily.

This almost invariably causes a marked reduction within a short time. When quinia fails, however, and the temperature remains high, the patient is placed on the water-cot and cold applied; but, as a rule, he finds the use of cold dangerous.

Dr. Loomis considers it of the greatest importance to detect the first signs of commencing heart failure, as death in the majority of instances is due to insufficiency of the heart. This he believes to depend upon a defective cardiac nerve supply, which may be due to a morbific agent present in the pneumonic process. To overcome this loss of nerve power, he finds *opium* of greatest value, besides affording comfort and relief from the suffering. Believing that

the heart failure, though it may not be apparent, is initiated at the onset of the disease, or at all events at a much earlier period than it is usually manifested, his rule is to bring the patient under the full influence of opium at the commencement of the pneumonia, by hypodermic injections of morphia, and to keep up a condition of comfort until the period of infiltration is completed; usually for the first four days. After this he advises great care in its use, otherwise paralysis of the bronchi may follow, with accumulation of the secretions. By this treatment he finds that the chances of heart failure are greatly lessened, and cases which from age and other circumstances seemed hopeless, have recovered. The administration of opium in this way, he advises, does not interfere with the antipyretic treatment of the disease, nor does a demand for alcoholic stimulation contraindicate its use.

As to *bleeding*, DR. LOOMIS regards this procedure, even in the strong and robust, as one which tends to retard convalescence, and more or less dangerous. In such cases, however, where there is sudden congestion and œdema, he resorts to free venesection with marked benefit. In very young, or elderly, or in asthenic patients, blood-letting is contraindicated. Antimony and calomel he discountenances. In regard to veratrum viride and aconite, he classes them in the same category with bleeding. Where a heart tonic is indicated, he prefers *digitalis*. After consolidation has taken place, for sustaining the heart's action *alcohol* is administered, the amount

being determined by the state of the pulse; usually varying from ℥ iv. to ℥ viii–x. daily. In enfeebled patients, however, alcoholic stimulants are often required from the beginning, while in the young and robust very little, or frequently none at all, is needed. He also employs *carbonate of ammonium*, at times, but prefers *champagne* for a diffusible stimulant, as the ammonia is apt to disturb the stomach. Counter-irritation is also resorted to when indicated. If pulmonary œdema occurs, dry cupping is applied with great benefit. Occasionally the oil-silk jacket is found very beneficial. During convalescence the diet is made of the most nutritious character, and tonics, *iron* and *cod-liver oil* freely administered. The following is the formula for Dr. Loomis' tonic:

℞.	Quiniæ sulph. . . .	grs. xxx.
	Acid. sulph. dil. . . .	q. s.
	Aquæ	℥ ii.
	Tinct. ferri chlor. . . .	℥ ss.
	Spts. chloroformi	ʒ vi.
	Glycerinæ q. s. ad. . . .	℥ iv.
M.	Dose: A teaspoonful.	

In chronic, or interstitial, pneumonia he advises that everything promoting nutrition be employed and carried to the highest possible degree, together with the administration of those remedies which serve to check the further progress of the disease. By the use of stimulating inhalations, such as *oleum terebinthinæ*, he also endeavors to relieve the tubes of their accumulations and so avoid their be-

coming fetid. If the condition is due to a bronchitis, every precaution must be taken to prevent attacks of this character.

In Dr. Austin Flint's wards, patients with pneumonia are not infrequently treated solely on the expectant plan, and without the interference of medicinal measures. This is particularly true of mild attacks where the patient is in robust health, temperate, and with good history. He orders a diet consisting of milk and eggs, or milk and beef-tea, a pint of either being taken during every four hours, combined with rest in bed. A small amount of whiskey is also administered throughout the course of the disease, according to indications. In these patients even where the case has advanced to the second stage when first seen, the same plan is pursued in many instances. Morphia is given for the pain. If the fever exacerbates, a full dose of *quinine*, *grs. x–xx.*, is given and usually controls it. These cases all go on to recovery very favorably without any medication whatever, no indications for positive treatment arising.

In severer forms, where there is more or less prostration, pain and cough, with anorexia, he administers stimulants:

℞. Spts. vini gall. . . . ℥ss.
Sig. Dose, every two hours.

together with a milk diet. If the heart's action is feeble and somewhat irregular, he gives *tincture of digitalis, m. xx. three times daily.* Should diarrhœa

come on, the following is usually employed with success:

℞. Tinct. opii . . . . .
Tinct. capsici . . . .
Spts. camphoræ . . . . āā ℥ i.
Chloroformi . . . . ʒ iii.
Alcoholis q. s. ad. . . . ℥ v.
M. Dose: twenty minims.

Where the temperature is not high, nothing in the way of an antipyretic is resorted to. When, however, the pyrexia requires treatment, he orders *quiniæ sulph. grs. xx–xl. daily*, with very marked benefit. If pulmonary œdema supervenes with imminent danger, his resort is to immediate *venesection*, drawing blood to ℥ x–xii.

Dr. Flint not infrequently employs *cold* in the form of the wet-pack, as an antipyretic in pneumonia. So far his results have been very favorable. As a rule, when the fever reaches 103° the pack is resorted to; the body, nude, is wrapped in a sheet wet with water at a temperature of 80° F., and sprinkled at short intervals with water of the same temperature. While he does not consider this procedure admissible in all instances, yet he believes that in uncomplicated cases the patient may remain in the *wet-sheet*, with sprinkling of cold water, not only without danger but with positive benefit, until the temperature has fallen two, three, or more degrees. He also repeats the treatment with perfect safety whenever the hyperpyrexia returns. The period required for this reduction of the fever, he finds, varies from one

to several hours. On one occasion the patient remained in the wet sheet ten hours. Sometimes, however, the temperature continues to fall after removal from the pack or bath. DR. FLINT is also inclined to think that cold has a favorable influence on the course of the disease. In his wards he has, in some instances, treated exclusively by this antipyretic measure, and many of these cases recovered in a shorter time than the usual average. As a rule, however, in addition to this means, the patient is put upon a diet of milk and eggs, together with *whiskey in* ℥ *ss. doses* every two hours, especially if addicted to its use. *Ammonium carb. grs. v. every two hours*, are also given, and *morphia* in sufficient amount to relieve the pain and secure rest. To the administration of quinia and ammonium carbonate, in these cases, he also attributes a certain amount of influence.

In those cases where pulmonary œdema exists in a degree sufficient to cause much embarrassment of the respiration, DR. FLINT resorts very successfully to immediate *blood-letting*. The dyspnœa which remains he treats with inhalation of oxygen gas. In such instances, although he does not consider it a positive contraindication, yet he believes it best to err, if at all, on the side of caution; therefore he would not employ the wet sheet lest it might do harm. Sponging of parts of the body is, however, resorted to with good effect. By practicing this continually for a long time, he often accomplishes all that is to be obtained by the wet-pack or the cold bath.

The following cases, treated in DR. FLINT'S wards at this hospital, will serve very effectually to illustrate these two plans of treatment, namely, *blood-letting* and *cold*. They are mentioned in full, with all the variations of temperature throughout the course of the fever, in order to exhibit minutely the therapeutical indications, and the effects of the treatment prescribed.

CASE I.—In this case blood-letting was employed, followed by the sponge-bath as an antipyretic.

S. K., female, æt. 23; domestic; admitted May 9th. Four days before admission, patient had a well-marked chill, with vomiting, headache, fever, and pain under the left nipple. She grew weak, lost appetite and all power of exertion, but still kept at work up to time of entering the hospital. On admission, temperature 102°, pulse 120, and respiration 40. Cheeks flushed. Patient complains of great weakness and of pain in the left mammary region, with cough and rusty expectoration. Over the lower lobe of the left side there was increased fremitus, dulness, bronchial breathing, and bronchophony. No râles. Heart, abdominal viscera, and urine normal. Patient was ordered *whiskey* ℥ *ss. every half hour*, and *ammonium carbonate, grs. v. every two hours;* together with—

℞. Infus. digitalis. . . . ℥ ss.
Morph. Sulph. . . . gr. ⅛.
Sig. Dose, every three hours.

9th.—3.30 P. M., pulmonary œdema developed. *Venesection* performed and blood to ℥ xii drawn.

This quickly relieved the symptoms due to the œdema, which became less marked, and patient's general condition was much improved. 4.30 P. M., temp. 103½°; ordered *spts. frumenti*, ℥ss. *every hour*. 6 P. M., temp. 104°. 7 P. M., temp. same. 12 P. M., temp. 103½°.

10*th*.—10 A. M., temp. 103¼°. Dyspnœa intense; inhalation of oxygen gas ordered, which gave relief. 12 M., temp. 104°. 2 P. M., temp. 104¼°. 4 P. M., temp. same; severe dyspnœa; gave oxygen. 6 P. M., temp. 103¼°. 8 P. M., temp. 103°. 12 P. M., temp. 103½°.

11*th*.—9 A. M., temp. 103°. 12 M., temp. 104¼°. 2 P. M., temp. 104°; considerable dyspnœa; gave oxygen. Ordered the patient sponged with tepid water, only one extremity being exposed at a time. 4 P. M., temp. 104¾°. 5 P. M., temp. 103°. 7 P. M., temp. 104°. 8 P. M., temp. 103°. 12 P. M., temp. same.

12*th*.—5.30 A. M., temp. 103⅓°. 9 A. M., temp. 103¼. 11 A. M., temp. 103¾°; sponge bath ordered. 12 M., temp. 101¾°. 3 P. M., temp. 104°; sponge bath. 3.45 P. M., temp. 102¼°. 7 P. M., temp. 104°; sponge bath. 8 P. M., temp. 102°.

13*th*.—1 A. M., temp. 102°. 7 A. M., temp. 101¼°. 9.45 A. M., temp. 101°. 2 P. M., temp. 102°. 5 P. M., temp. same; normal alvine evacuation. 7 P. M., temp. 102°. 9 P. M., temp. 101½°.

14*th*.—8.45 A. M., temp. 99¾°. 11 A. M., temp. 99°. Patient's condition greatly improved. Dulness on percussion diminished; respiration broncho-vesi-

cular; increased vocal resonance, and râles redux; vocal fremitus slightly increased. Stimulants reduced to ℥ss. every two hours. 6 P. M., temp. 99¾°; digitalis discontinued.

15*th.*—8 P. M., temp. 98¾°; 6 P. M., temp. 99¾°; carbonate of ammonium stopped, and ordered *whiskey, ℥ss. three times daily.*

16*th.*—A. M., temp. 98¾°. P. M., temp. 99°. Dulness now very slight. Broncho-vesicular breathing replaced by natural vesicular respiration, and vocal resonance normal.

18*th.*—A. M., temp. 98¼°. P. M., temp. 98½°. Ordered:

℞. Tinct. ferri chloridi . . . gtt. xx.
Sig. Dose, three times daily.

19*th.*—A. M., temp. 98¼°. Patient now fully convalescent. Perfect recovery took place without any perverse symptoms.

CASE II.—Treated by means of the *wet sheet.*

C. L., male, æt. 32; laborer; admitted May 16th. The patient had no regular occupation; had wandered about the streets exposed to all kinds of weather, and frequently remaining in wet clothes for hours. Four days before admission he was suddenly taken with severe chill, followed by fever, pain in the right side, and cough. The next day although considerably weakened, he was on the streets as usual. From that time until his entrance into the hospital, he passed the days in the park, and the nights in a cheap lodging-house. On admission, the face was

flushed, dusky, and had an anxious expression. He complained of cough, pain in the right side, anorexia and weakness. His chart showed axillary temperature 104°; pulse 90, and strong; respiration, 26. Over the lower and middle lobes of the right lung were dulness, increased vocal fremitus, bronchial respiration and bronchophony. No râles. Expectoration rusty and adhesive. Heart, liver and spleen normal; urine the same.

The wet sheet was applied, and the patient left, uncovered, beneath it whenever the temperature reached 103°, and was not removed until the temperature of the mouth had been reduced to 102°. He also had the following: *Quiniæ sulph. grs. v. every four hours* together with *ammonium carbonate, grs. v. every three hours.*

16*th.*—5 P. M., temp. 104°; wet sheet applied. 7 P. M., temp. 101°; wet sheet removed. 9 P. M., temp. 102¼°. 11 P. M., temp. same.

17*th.*—2 A. M., temp. 103¼°; the wet sheet was applied. 4 A. M., temp. 102°; wet sheet removed. 8 A. M., temp. 101¾°. 10 A. M., temp. 101½°; pulse, 90; respiration, 30. 12 M., temp. 101½°. 2 P. M., temp. 102¼°. 4 P. M., temp. 103°; wet sheet applied. 5 P. M., temp. 103¼°; temperature taken by the rectum, the sheet being still applied. 7 P. M., temp. 102¼°. 8 P. M., temp. 101¼°; the sheet was removed.

18*th.*—12 P. M., temp. 101½°. 6 A. M., temp., 100¾°. 8 A. M., temp. 101¾°. 10 A. M., temp. 101°; pulse, 72; respiration, 30. Over the middle lobe the bronchial has given place to broncho-vesicular respiration,

and bronchophony to increased vocal fremitus. Subcrepitant râles are heard. The pneumonia has, however, invaded the upper lobe, and dulness, bronchial breathing and bronchophony extend upward nearly to its apex. Pleuritic friction sounds are heard over the whole anterior surface of the lung. Bronchial respiration, bronchophony and crepitant râles are now heard over the entire lower lobe, and over the lower portion of the upper lobe. 12 M., temp. 102¼°. 2 P. M., temp. 102½°. 4 P. M., temp. 101°. 8 P. M., temp. 101¾°.

19*th*.—12 P. M., temp. 102°. 4 A. M., temp. 101½°. 8 A. M., temp. 100¾°; pulse full, 72; respiration, 24. 10 A. M., temp. 100½°. At the right apex, anteriorly, respiration is now broncho-vesicular. Behind, the signs are the same as on yesterday. 12 M., temp. 101¾°. 6 P. M., temp. 101½°.

20*th*.—8 A. M., temp. 101¼°. 8 P. M., temp. 100.°

21*st*.—A. M., temp. 98½°.

22*nd*.—Temperature, A. M., 98½°; P. M., 98½°. Over the lower lobe, and over the lower portion of the upper lobe, bronchial respiration and bronchophony are less marked. Friction sounds and crepitant râles still heard over both lobes, anteriorly.

24*th*.—Temperature normal. The respiratory murmur, over the affected lobes, is now broncho-vesicular in character, and bronchophony has been replaced by slightly increased vocal resonance. Patient sits up, and his appetite is excellent.

29*th*.—Resolution complete, and physical signs

normal. Slight dulness still exists over the lower lobe, referred to pleuritic thickening.

June 3d.—Patient discharged, entirely recovered.

DR. W. H. THOMSON places the patient on a milk diet, together with, in ordinary cases, *whiskey, ℥ iii. daily.*

He also prescribes the following:

℞. Ammon. carb. . . . grs. lxxx.
Mucilag. . . . .
Aquæ . . . . . āā fl. ℥ i.
Spts. vini gallici . . . fl. ℥ ii.
M. Sig. A tablespoonful three times daily.

When indicated, he alternates this with the following expectorant:

℞. Syrup scillæ co. . . . . ℥ iii.
Vini ipecac. . . . . ℥ iss.
Morph. sulph. . . . . gr.ss.
Aquæ . . . . . ℥ iss.
Syrupi q. s. ad. . . . . ℥ iv.
M. Sig. A tablespoonful three times daily.

The good effect of these is often promptly and markedly shown. Where the dyspnœa becomes severe, with signs of increasing exhaustion, feeble heart action, etc., he increases the amount of stimulants to ℥ xii daily, and orders in addition:

℞. Infus. digitalis . . . . ℥ ii.
Sig. Dose, every three hours.

In some cases, where dulness is present over more or less of the lung, he prescribes ammonium muriate, grs. xx. three times daily with great advantage.

Dr. E. G. JANEWAY confines the patient to bed, on a milk diet, and for the high temperature gives:

℞. Quiniæ sulph. . . . . grs. x.
Sig. Dose, three times daily.

With this he also administers stimulants as indicated, and morphia in doses sufficient to relieve the pain.

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The patient is placed on a milk diet, combined with rest in bed. Dr. W. H. DRAPER considers that the importance of absolute *rest*, in the treatment of pneumonia, cannot be over-estimated, and that to obtain it the most stringent rules should be enforced. This, he believes, is not recognized as much as it should be in the treatment of diseases in general, more especially acute affections; and that it may be considered possible for a patient of good constitution to pass through a course of pneumonia and recover, without the use of a single drop of medicine, provided he have absolute rest. In a great many instances his treatment is altogether supporting and entirely on the expectant plan, so-called; complete rest and antipyretics forming the chief means. Yet he does not consider it strictly expectant, since the heart's action is carefully watched and the fever controlled.

In regard to bleeding, DR. DRAPER objects to such a procedure. Tartar emetic is also discountenanced. Poultices, and the oil-silk jacket he con-

siders as very uncomfortable to the patient, and do no good.

On admission, the patient is, as a rule, put upon *alcohol*, *digitalis*, and *quinine*; these are increased in amount at night, and diminished during the day. The following is the formula for the hypodermic solution of quinine used at this hospital:

℞. Quiniæ sulph. . . . grs. clx.
Ac. hydrobrom. (Squibbs) . fl. ʒ i.
Spts. frumenti . . . ad fl. ℥ i.
M. Ft. solut.

Mild cases, he repeatedly finds, require no medicine whatever, and do perfectly well, making excellent recovery with careful nursing, judicious feeding, and proper attention to the maintenance of the vital powers.

In severer forms, however, the indications are mainly to lower the temperature and support the heart. For an antipyretic, *alcohol* is employed, or, at times, quinia also. The amount of alcohol required for this purpose is of course varied. In ordinary cases he administers *brandy*, ℥ *t every three hours*. But in severe cases large doses are needed. When the fever is at its highest,

℞. Spts. vini gallici . . . ℥ xviii.

are not infrequently given during the day; as a result, the pulse grows steadier and firmer and the temperature falls within bounds. After defervescence is established, this quantity is reduced to ℥ xii-viii. or less. Dr. Draper finds this method of treatment almost

invariably successful. In some instances, seen in the first stage, with high fever, he orders *quiniæ sulph. grs. x., thrice daily.* This, in combination with the careful administration of alcohol, has very high value in reducing the temperature. By the use of quinine he also obtains marked service in controlling the nervous exhaustion. When pain is prominent, opium is given in sufficient amount to relieve it.

To assist the heart in overcoming the breathing obstruction, stimulants are required. For this purpose DR. DRAPER administers digitalis and brandy, as follows:

℞. Spts. vini gallici . . . . ℥i.
Tinc. digitalis . . . gtt. x.
Sig. Dose, every two hours.

Where signs of extreme exhaustion are present, he considers that vigorous stimulation is demanded (brandy being preferred) up to the time of expected defervescence. If heart failure becomes evident, *ammonium carbonate* and *digitalis* are administered freely. Especially in such cases, he advises, it is to be remembered that the vitality of the patient is at its lowest in the early morning, reaching its minimum between the hours of three and four; hence during the night the indication for stimulants is consequently stronger. Where there is a condition of restlessness, *opium* is given with advantage. If insomnia is prominent, DR. DRAPER employs digitalis, either alone or with opium, and finds that by diminishing the irritability of the respiratory centre

its effect is of marked benefit. He prefers it in combination with opium, the result being usually better than from either drug alone. When nausea is very troublesome the food is given in small quantities and at short intervals with excellent effect. Should pulmonary œdema or congestion occur, prompt and efficient counter-irritation is resorted to by means of dry cups, or sometimes turpentine stupes, together with cardiac stimulation; the more diffusible stimulants, such as ammonia and alcohol, being employed. This is usually a source of great relief. He also uses small doses of morphia, atropine, or digitaline, with good effect; cautioning, however, that as a cardiac stimulant the dose of morphia must be small · he gives:

℞. Sol. morphiæ sulph. (Magendie) gtt. iv-vi.
Sig. Dose.

This may be repeated in two or three hours if necessary. Or morphia and digitalis is given in combination. The extremities must also be kept warm. Inhalation of oxygen is at times advised and frequently with very satisfactory effect; that is, the immediate result is beneficial and the patient feels greatly relieved. By these urgent measures he is often enabled to tide over the critical period. In all cases, however, DR. DRAPER advises that the occurrence of œdema be more carefully appreciated, as this condition does not always receive the attention which its emergency demands. When the pneumonia is accompanied by pleurisy, *counter-irritation* is

applied in the form of iodine or blisters over the affected part; and if much prostration is present, he prescribes the following:

℞. Spts. vini gallici . . . . ℥ i.
Ammon. carb. . . . . grs. v.
Infus. digitalis . . . . ℥ i.
Sig. Dose, every hour.

In regard to *diet*, DR. DRAPER considers milk the best article of food. He finds that while patients of acute disease may suffer from want of food, yet, as a rule, they are over-fed, and he believes that a little judicious starving in disease is better. Nor should the wishes of the patient be consulted in the choice of food. The diet should be taken in small quantity and be of the most nutritious quality, consisting of milk, animal broths, etc., but not of solid food of any kind. A milk diet he considers the best in the great majority of cases, but where this cannot be taken for so long a period, animal broths may be given. These however, he directs, must be fluid, concentrated, and rich in all the elements of animal fibre; not merely the solution of a few salts with extractive matters. He strongly urges that the tendency to fill up with "sick-pap," farinaceous food, gruels, etc., be abolished as especially bad, setting up fermentative dyspepsia and often causing serious complication. Sweets are usually disgusting to the sick and must also be abolished. DR. DRAPER believes that feeding is ofttimes of the greatest significance, and while the age, digestive powers, etc., must be taken into consideration,

yet he thinks there is no more important duty than to insist upon the most absolute strictness regarding the kind, quality, and amount of food for the patient.

In regard to *antipyretics* in pneumonia, DR. DRAPER'S views are worthy of earnest consideration. He advises that in simple pyrexia, where the temperature does not attain a very high degree, antipyretics should not be pushed to any extreme resort; mild cases should be fed judiciously and carefully watched, waiting on nature. But in all high grades of fever active and vigilant interference is demanded, for with each degree of reduction the danger is correspondingly lessened. Hence to control, to reduce the temperature every twenty-four hours the average degree of the fever is the most essential feature; if this is not done the patient dies from simple exhaustion. Quinia, he finds, though valuable as an antipyretic is not always to be relied on. When of specific service, it owes its power to an effect on the essential cause of the fever, as in malaria, surgical fever, etc. The same may be said of salicylic acid, and in pneumonia with previous history of rheumatism, he has frequently found this drug, in doses of grs. xx., more efficient than quinine. The use of cold in the form of the bath, pack, etc., he considers at least a courageous procedure, requiring great care and judgment, and should hardly be resorted to.

In regard to *alcohol* as an antipyretic, DR. DRAPER places the utmost reliance upon its administration in all high grades of temperature from any cause, and

believes there can be no question of its utility. It is an antipyretic, in that it does reduce the temperature; while, at the same time, it stimulates and supports the heart and also supplies something, a food, out of which force is eliminated for the vital functions. The fever is simply the using up of the patient, the consumption of organic life. Alcohol, being very unstable and combustible, is oxydized and split up by the fever into its elements, H_2O and CO_2; thus, by liberating its power and furnishing a food which is easily appropriated, it supplies the force which the patient loses in heat, and so saves exhaustion from the combustion of his tissues and lessens the animal heat.

The *feeding of the fever*, therefore, DR. DRAPER constitutes one of the most important elements of the treatment. For this purpose alcohol as a food is most easily disintegrated, and yields most readily its power. This action of alcohol he considers of specific value, not only in pneumonia, but in all fevers and at all ages. It also stimulates the nerve centres; the heart becomes more steady and firm, and the respiration diminishes in frequency and gathers more force. The quantity to be administered he finds varies with the patient; there is no law any more than with opium. In all cases it is important that the temperature fall, and the pulse become less frequent, until regulated from one twelve hours to another; hence he gives it until the desired effect be obtained. In this connection he calls attention to its almost utter impossibility to intoxicate in high

fever; for when consumed like any other food this action is not shown. Therefore large quantities may be taken, even a quart of brandy in twenty-four hours, without any of the usual symptoms of alcoholism, or any odor upon the breath. When these signs are present, however, alcohol is then circulating in the blood as alcohol, and is doing harm; its administration is then diminished or stopped altogether. The amount required ranges from ℥ iv. to ℥ xxiv. daily, usually ℥ xii. to ℥ xviii. For administration brandy is preferred, given with the food.

DR. DRAPER also considers it important to bear in mind the influence of alcohol under circumstances where the patient has become habituated to its use. In these subjects, even in *mania a potu*, with high fever and weak and feeble pulse, the fever requires food and the heart must be sustained; therefore he finds alcohol necessary, and the sudden withdrawal of it is often followed by wild and active delirium.

PRESBYTERIAN HOSPITAL.

To control the high temperature, *quinine* is given in doses amounting to grs. xxx-xl. daily. For sustaining the heart's action digitalis is employed. When the pain is intense, one or two *leeches* are applied to the affected side, drawing blood to ℥ ss-i. with most beneficial effect. For the dyspnœa DR. A. H. SMITH finds that *fluid extract of quebracho, m. xx-xl.*, often affords marked relief. The following

is his method of administering quinine by inunction, especially serviceable in children:

℞. Quiniæ sulph. . . . . ʒi.
Acid. oleic . . . . . ℥i.
Olei oliv. . . . . ʒii.

Dissolve the quinine in the acid by the aid of a gentle heat, and add the oil. The solution should remain clear.

Sig. For inunction, to be well rubbed in.

In regard to *bleeding*, Dr. A. C. Post believes that when the lancet is properly employed, and with careful discrimination, it is the great remedy in this disease, and that recovery follows more rapidly. He does not by any means apply this rule to all cases, or to all stages of the disease; but only in the commencement, not later, and in young, robust, and healthy subjects. When, however, consolidation has taken place, he would never resort to blood-letting.

The following formula, original with this hospital and very extensively employed, is recommended as of marked value in preventing the tinnitus aurium and lessening the unpleasant effects of quinine:

℞. Potass. bromid. . . . grs. clxii.
Acid. tartaric. . . . grs. cxcviii.
Quiniæ sulph. . . . . ʒi.
Aquæ . . . . . ℥iii.
M. et filt.

CHARITY HOSPITAL.

For the fever, and especially where the tempera-

ture remains high, DR. BEVERLY ROBINSON gives large doses of quinine (grs. xl). But in cases dependent on cardiac disease and with moderate fever, if the heart becomes weak and irregular, the respiration panting and labored, and the general symptoms alarming, he stops the quinine and gives *digitalis in large doses* with great benefit. When there is also a condition of anæmia, he administers tonics, together with a most nourishing diet, moderate doses of quinine, and stimulation to the extent indicated. If œdema develops, dry cups are resorted to. The following tonic mixture is very much used at this hospital:

℞.	Cinchoniæ sulph. .	grs. xxx.
	Acid. sulph. dil. . . .	q. s.
	Aquæ	fl. ℥ i.
	Acidi citrici	ʒ ss.
	Syrupi	fl. ℥ iss.
	Tinct. ferri chlor. . .	fl. ʒ ss.
	Aquæ q. s. ad. . . .	fl. ℥ iv.
M.	Dose: A teaspoonful.	

ST. LUKE'S HOSPITAL.

DR. J. R. LEAMING is a strong advocate of the *calomel treatment.* He considers it as a remedy which may be held in reserve when all others fail. The effect is rapid, and in many instances he finds that a patient falls to sleep in a very short time, who prior to the administration had been restless and unaffected by anodynes. By this medication he fre-

quently obtains a controlling effect on the heart's action and a reduction of temperature directly, although the full effects and benefit of the drug may not be had within twenty-four hours. On this plan he gives full, sedative doses, thus:

℞. Hydrarg. chlor. mit. . grs. xx-xxx.
Sig. Dose.

according to circumstances. These large doses, when indicated, he holds to be not only harmless but necessary, in order that the reparative process may continue after the internal inflammation is subdued; this action he claims as a special result of large doses. He gives the drug in the dry state, placing it upon the tongue, and there leaving it. The after treatment consists in supporting and building up the strength of the patient by good food, milk, eggs, etc. The following case from his observation is given as an excellent illustration of this plan of treatment.

J. R. L., physician, æt. 58, in good health. At 11 A. M., Nov. 16th, was taken with a prolonged chill. At 1 P. M., examination revealed crepitant râles in the lower half of the left lung, posteriorly, together with dull pain. Temperature, at this time, 105⅘°; pulse 160; respiration 40.

℞. Hydrarg. chlor. mit. . . grs. xxx.
Sig. Dose.

This amount was given at once, placed upon the back of the tongue. Temperature immediately commenced to fall until at 7 P. M. when it reached

99°. Before 10 P. M. a second chill supervened, after which the temperature again rose to 104½°.

17*th*.—A third chill occurred before noon, followed by a rise in temperature to 105°, with advance of physical signs. Above dose, *calomel grs. xxx.* was repeated, and again the fever began to fall. At 3 P.M., temp. 104°. 5.15 P.M., temp. 103°. 8.25 P.M., temp. 102°.

18*th*.—A. M., temp. 101¼°. During the day the temperature again exacerbated to 104°, with slight increase of the râles on the right side. After this the temperature did not rise above 101°, and on the seventh day perfect defervescence took place.

In this case relief was almost immediate, the patient being sensible of it within half an hour. No uncomfortable feelings whatever were caused by the calomel. Indeed, DR. LEAMING thinks it would possibly have been better had the entire drachm been given at once. This heroic treatment is, of course, not followed by him in all instances. In less severe forms of the disease, where the tendency is to recover, mild measures only are adopted.

ROOSEVELT HOSPITAL.

To preserve the strength of Magendie's solution of morphia, the following combination is used with perfect success:

℞.	Morphiæ sulph. . . .	grs. cclvi.
	Acid. salicylic. . . .	grs. v.
	Aquæ destil. . . .	fl. ℥ xvi.

Dissolve the salts in the water, previously heated to the boiling point, and filter.

By this method, also, the solution does not change or become flocculent. The combination was originally formulated by Dr. H. M. Keyes of this hospital.

For the hypodermic use of morphia with atropia the following is employed:

℞. Morphiæ sulph. (Magendie). . ℥ i.
Atropiæ sulph. . . . gr. ss.
M.

Digitaline is administered hypodermically thus:

℞. Spts. frumenti . . . . ℥ i.
Digitalin. . . . . gr. ss.
M. Sig. Twenty minims.

PLEURISY.

DEFINITION.—An inflammation of the serous membrane which lines the cavity of the chest and covers the contained viscera; expressed by acute, lancinating pain, usually confined to one side, dyspnœa, and a short, dry cough. The normal secretion of the pleura is at first arrested, then, becoming increased in amount, may accumulate until it ultimately fills the corresponding sac; it is also changed in quality and may finally become purulent.

BELLEVUE HOSPITAL.

ACUTE PLEURISY.—DR. LOOMIS requires that the patient have complete rest in bed, and a good nutritious diet be provided. *Blood letting* and all depleting measures are avoided. Anodyne poultices are applied to the chest and *morphia* given to relieve the pain, injected hypodermically over the seat of intensity. This he finds of greatest benefit. Where anæmia is present iron is administered, thus:

℞. Syrup. ferri iodidi . . . ʒi.
Sig. Dose, three times daily.

In the latter stages stimulants are sometimes

employed together with tonics, especially if recovery is delayed from an excessive amount of effusion present.

Dr. Alonzo Clark resorts to prompt antiphlogistic measures to prevent abundant effusion. *Cups* with scarifications are applied to the affected side, and repeated two or three times after proper intervals. When the pain has subsided he employs *blisters* to overcome whatever inflammation remains. He finds no occasion for diuretics, but considers diaphoretics very serviceable in the later stages. Fomentations of warm water, or anodyne poultices, are also used with good effect. The constitutional treatment he considers of little consequence, as a rule almost none being required.

In mild cases, presenting at this hospital, where the area of plastic effusion is small, a smart blister applied over the part has marvelous effect in relieving the pain and accompanying distress, and promoting absorption of the effused material.

Dr. Austin Flint, as a general rule, does not resort to diuretics or hydragogues to diminish the fluid. He considers them not only unnecessary in many instances, but believes that they impair the strength of the patient and impede recovery. Where the patient is of good constitution, with good inheritance and no pulmonary trouble, and where there is every ground for favorable prognosis, his treatment is mostly on the expectant plan. He administers tonics with nutritious diet, applies iodine to the chest, or frequently a blister, and gives mor-

phia to relieve the pain and afford rest. The following tincture of iodine is used at this hospital:

℞. Iodinii . . . . . ℥ ijss.
Potass. iodidi . . . . ℥ ss.
Alcoholis (75 per cent.). . ℥ xvi.
M.

A little effusion may remain for some time, but will finally be disposed of by nature. Unless the fluid is so abundant as to cause intense dyspnœa, the aspirator is not employed.

SUBACUTE PLEURISY.—DR. LOOMIS seldom uses any extreme diuretic measures, cathartics or blisters. The nutrition of the patient is increased to the highest by means of iron, tonics, etc., giving:

℞. Syrup. ferri iodidi . . . . ℥ i.
Sig. Dose, every three hours.

Combined with a full and nourishing diet. Under this plan of treatment absorption is promoted, and the most satisfactory results obtain. In regard to drawing off the fluid, when it is abundant he resorts to early *aspiration*. Also, after the effusion has remained at a stand-still for one week; or, especially if the pleural cavity is greatly distended, thus obstructing the vessels and preventing absorption, aspiration is employed. For this purpose DR. LOOMIS objects to the needle, in aspirating, as dangerous; it may injure the visceral pleura or the pericardium, and he therefore prefers to use the trocar and canula.

To subdue the local inflammation DR. CLARK advises the application of blisters, three being usu-

ally a sufficient number. He selects three points over the chest, applying one blister at a time; the second and third not being used until the spot of the former application has healed. Active diuretics are then employed. He usually gives *potassium iodide, grs. xxx thrice daily.*

Should this fail to lessen the amount of the fluid, he makes use of the following:

℞. Potass. acetat.
Infus. digitalis . . . āā ʒiii—iv.
M. Sig. This amount daily.

Or a diuretic pill, combined as follows, is greatly favored by him:

℞. Pulv. digitalis.
Pulv. scillæ.
Hydrarg. chlor. mitis . . āā gr. i.
M. ft. pil. No. i.
Sig. Dose, three times daily.

When the constitutional effects of mercury are prominent, he then returns to potassium iodide. In some cases of highly nervous women, the milder counter-irritants, such as ammoniacal liniment, are employed; but, as a rule, Dr. Clark has little faith in them. Cathartics are also used at times, and the steam bath when indicated. If all these means fail, the aspirator is resorted to. He objects to the early use of the trocar, however, unless forced to do so, from danger of the serous effusion becoming purulent.

In simple, uncomplicated cases, DR. FLINT does very little in the way of medication. He orders good nourishment, and employs counter-irritation by means of blisters or iodine (not infrequently for the patient's satisfaction), and occasional mild diuresis; at the same time restricting the patient in the use of the upper limbs, and avoiding all violent exercise. When the effusion is reduced to a minimum, he usually finds that nature takes care of the remainder. In more urgent cases, to diminish the fluid the administration of hydragogues and diuretics are employed. For a diuretic he very often prescribes:

℞. Potass. acetat. . . . . ʒ ss.
Infus. digitalis . . . . . ℥ ss.
M. Sig. Dose, every four hours.

In addition to this, olei tiglii gtt. ii. are given. Sinapisms or belladonna plasters are also applied to the chest for relief of the pain. Tonics, *iron* and *quinine*, are administered, and, when indicated, small doses of *cod-liver oil*, together with alcoholic stimulation. Where fever is present with exacerbations and more or less night-sweats, dyspnœa, cough, etc., the fever is controlled by quinine, and sulphuric acid is given to relieve the sweating. In regard to *aspiration*, DR. FLINT prefers the trocar and canula, as he believes that the sharp point of a needle is apt to injure the visceral pleura and to scratch the lung. In withdrawing the fluid, as soon as the patient complains of any sense of oppression about the chest, the flow is immediately stopped.

The following cod-liver oil mixture is often used at this hospital:

℞. Ol. morrhuæ . . . . ℥ xvi.
Liquor potassæ . . . . ℥ iiss.
Mellis . . . . . ℥ iii.
Pulv. acaciæ . . . . ℥ i.
Ol. anisi . . . . gtt. xx.
Ol. menthæ vir. . . gtt. xviii.

M. Dose: A tablespoonful.

Dr. E. G. Janeway also objects to the needle as dangerous. In cases of pleurisy associated with bronchitis, where there is great dyspnœa and cyanosis, he applies repeated dry cupping to the chest, and administers digitalis and brandy hypodermically.

In some cases, at this hospital, such as are occasionally met with in patients of chronic alcoholism, where the natural sensations have been more or less perverted by the excessive use of alcohol, when there is almost entire absence of rational symptoms, no cough or dyspnœa, and very little pain, the repeated application of blisters is very often attended by rapid disappearance of the fluid.

In all cases it is considered very important to remove the fluid, if possible, early in the history of the disease, with a view to preventing its change to purulent.

When diuretics are needed, the following are used in many of the wards:

℞. Infus. digitalis . . . ℥ ss.
Potass. acetat. . . . grs. xii.

M. Sig. Dose, every three hours.

Or,

℞. Potass. bicarb. . . . grs. xxx.
Infus. scoparii . . . . ℥ ss.
M. Sig. Dose, every three hours.

Sometimes *jaborandi* exerts a very marked effect on the effusion. It is given in doses just sufficient to keep up a free action of the skin and kidneys; usually thus:

℞. Ext. jaborandi fl . . . ℥ ss.
Aquæ . . . . . q. s.
M. Sig. Dose, three times daily.

This drug, however, is not found reliable in all cases.

EMPYEMA.—When the fluid has become purulent its immediate removal is indicated. For this purpose DR. LOOMIS, as a rule, employs aspiration at intervals of three or four days. The system is thoroughly supported by good, nutritious food, tonics, *iron* and *quinine*, together with the administration of stimulants and *cod-liver oil* when needed. If practicable, he also advises a change of climate. In empyema occurring with blood-poisoning, a free opening is made in the chest, the pus evacuated, and the cavity washed out with a weak carbolic acid or other antiseptic solution.

The following prescription is one of DR. LOOMIS' tonics, used at this hospital:

℞. Sol. quiniæ sulph. . (gr. xv.-℥ i) · ℥ ii.
Tinct. ferri chlor. . . . ℥ ss.

Spts. chloroform. . . .	ʒ vi.
Glycerinæ q. s. ad. . . .	ʒ iv.

M. Dose: A teaspoonful.

DR. CLARK first tries the common means employed in the treatment of subacute pleurisy. If these fail he finds but one resource, namely, *puncture* of the chest. Where an aspirator or pump cannot be obtained his practice is to incise the skin, plunge in a trocar and canula and, after withdrawing these instruments, insert into the opening thus made a linen tent, fastening this by its free ends to the chest by means of adhesive strips. The tent is removed every day or two, to allow the pus to run out. DR. CLARK is, however, partial to the aspirator with a fine trocar, thus avoiding the use of the scalpel.

Before introducing the needle he always benumbs the part by firm pressure with the fingers. The piston is worked slowly, the fluid being drawn until oppression is felt at the sternum. He advises caution against drawing off too much at any one time, for fear of creating a vacuum too great for the comfort of the patient. In front the operation is performed between the sixth and seventh ribs to avoid wounding the diaphragm; on the side the opening is made between the seventh and eighth, and in the back between the eighth and ninth ribs. In regard to the injection of iodine for the prevention of further effusion of the pus, DR CLARK thinks this procedure is attended with more harm than good. If injections are to be used at all, he prefers simple warm water. The strength of the patient is sus-

tained throughout by tonics, good nourishment, etc. The aspiration is repeated as often as necessary.

The following is DR. W. H. THOMSON'S tonic formula, which is very extensively employed at Bellevue:

℞. Ferri et ammon. cit. . . . ʒ i.
Ammon. carb. . . . gr. xxx.
Tinct. gentian. co.
Tinct. quassiæ . . . āā ℥ ii.
Syrupi. . . . . ℥ iss.
Aquæ q. s. ad. . . . ℥ viii.
M. Dose: A dessertspoonful.

DR. FLINT also employs aspiration. In those instances, however, where after finding pus at the first tapping, and upon introducing the needle or trocar at each succeeding period no pus is obtained, he advises that the operation be abandoned and the patient let alone.

DR. JANEWAY practices aspiration once or twice. If he finds that the sac diminishes after each aspiration, he considers the case doing well, and continues the treatment; in some cases repeating the operation several times. When, however, such success does not attend this procedure, he makes a *permanent opening* in the chest wall, inserting a drainage tube and washing out the cavity with a dilute solution of carbolic acid.

DR. W. M. POLK keeps up the patient's strength by the administration of *iron*, *quinine*, and sometimes *strychnine*, combined with a most nutritious diet and occasional moderate stimulation.

The following is used at this hospital:

℞. Sol. quiniæ sulph. (gr. xv.-℥ i.) . ℥ ii.
Tinct. ferri chlor. . . . ʒ ii
M. Dose: A teaspoonful.

Aspiration is first employed, but sometimes, after this has been practiced repeatedly, the pus re-accumulates, and the patient becomes anæmic, weak, and loses health. In such cases he performs operation with the best results. This has been followed by recovery in many instances where, to all appearances, the patient was fast failing under repeated aspiration.

Indeed, it may be said that a *permanent opening* is the rule at this hospital. In cases of simple empyema, where, after aspiration, the fluid increases and the patient shows emaciation with hectic, this procedure is very generally practiced. A free incision is made, and the pus evacuated, giving almost instant relief to the dyspnœa, and followed by improvement. A drainage tube is usually employed, and the cavity washed out daily with carbolized water, 1-200 or 1-100; or some cases often do well by simply keeping the opening closed with a tent.

NEW YORK HOSPITAL.

Acute Pleurisy.—Dr. W. H. Draper directs that the patient be put to bed and rest and quiet obtained. Good nutrition is secured and stimulants given when indicated. If there is much weakness and prostration present, *ammonium carbonate* and

spirit of mindererus are administered. The following solutions are very much used at this hospital:

Concentrated.

℞. Acid. acetic. . . . . ℥ ii.
Aquæ fervent. . . . . ℥ ii.
Ammonii carbon. . . . q. s.
Ft. sol. neutral. Evaporate to ℥ ii.

This keeps well.

Dilute.

℞. Liq. ammon. acet. conc. . . ℥ i.
Aquæ acidi carbonici . . ℥ xv.
M.

Counter-irritation by means of iodine, is applied to the chest, combined with some diuresis. *Blisters* are also employed; the application of a sharp blister, two or three inches square, being often followed by the most excellent results.

SUBACUTE PLEURISY.—In many instances, DR. DRAPER considers this as practically a dropsy of the chest and treats accordingly. The patient is provided with a most nutritious diet, and absolute rest enforced. Counter-irritation by means of iodine is applied to the chest, combined with the administration of diuretics. Of these he sometimes uses digitalis, or *digitalis* and *iodide of potassium.*

The following diuretic pill is often used at this hospital:

℞. Pulv. scillæ
Pulv. digitalis
Massa hydrarg. . . . āā gr. i.
M. Ft. pil. No. i.

Or, in many cases, the so-called "*diuretic wine*" (squill, digitalis, and potassium acetate) is employed.

If, however, from a continued use of this preparation the effects of digitalis on the pneumogastric nerve become marked, its administration is stopped and the salines given.

The following is from this hospital:

℞.	Potass. acetat. . . .	ʒ ii.
	Potass. et sodii tart. . .	ʒ i.
	Syrup. zingiber. . . .	ʒ i.
	Aquæ	ʒ iii.

M.

After one or two weeks, should these measures fail to make any impression on the effusion, *puncture* is resorted to and the fluid withdrawn by the aspirator. This, DR. DRAPER considers the only reliable means, particularly where the effusion is in large amount. The needle is sometimes introduced in the fifth or sixth intercostal space, along the axillary line; but usually the eighth or ninth space posteriorly is selected, on a line let fall from the inferior angle of the scapula.

EMPYEMA.—DR. J. W. MCLANE in many cases favors the *operative treatment;* a drainage tube is inserted and full Lister dressing employed. For washing out the cavity, he sometimes uses a warmed solution of thymol, 1-1000. He directs that careful attention be given to the rigid exclusion of all air from the pleural sac, until the crippled lung has had ample time to expand and contract adhesions; and

even then none should be admitted that is not rendered thoroughly antiseptic. He also insures a gradual withdrawal of the pus and a free exit of the fluid while washing out the cavity, in order that fresh adhesions between the two pleural surfaces may not be broken up. By these means most gratifying results obtain.

DR. DRAPER, in certain cases, employs the *aspirator* very effectually, supporting the patient with good nutrition, etc. In other instances where the general condition is bad, with hectic and night-sweats, a permanent opening is made and free drainage established.

For a tonic, the following is often employed at this hospital with excellent effect:

℞. Tinct. ferri chlor. . . . ℥ vi.
Strychniæ sulph. . . . grs. viii.
Cinchonid. sulph . . . . ℥ i.
Tinct. zingib. . . . . ʒ ii.
Glycerinæ
Acid. phosphor. dil. . . āā. ℥ xvi.
M. Dose: A teaspoonful three times daily.

FIBROUS PLEURISY.—In extreme cases where the functions of the lungs are greatly diminished, causing interference with the pulmonary circulation, with possibly commencing œdema, DR. DRAPER enjoins complete rest in the recumbent position and avoidance of all excitement. If signs of approaching collapse are apprehended, alcohol and digitalis are given and dry cupping applied. After relieving the imme-

diate symptoms, *counter-irritation* by iodine is then resorted to and kept up for some time. The following is the formula for the tincture used at this hospital:

℞. Iodinii . . . . . ʒ i.
Potassii iodidi . . . . ʒ ii.
Aquæ destil.
Alcohol. . . . . āā. ℥ ii.
M.

For the dyspnœa, *opium* with digitalis is given affording much relief. *Quebracho* is also frequently used for this purpose, either alone or with opium, and the dyspnœa often greatly alleviated; but this remedy is at times variable in its result. This condition frequently arising from poor nutrition, DR. DRAPER advises especial care in regard to the food. Diuretics and diaphoretics are rarely resorted to. He finds that these patients improve in a marked degree upon a regular systematic diet, which at the same time must be of the most nutritious quality. With this he also administers *cod liver oil and iron*, the good effects of which are especially prominent in children. The following emulsion is used at this hospital:

℞. Ol. morrhuæ . . . ℥ vi.
Ol. anisi . . . . ʒ ss.
Ol. sassafras . . . . gtt. x.
Liq. calc. sacchar. . . . ℥ ii.
M.

(Not compatible with acids).

He does not, however, expect much from these cases, although the patient may be relieved of a great part of the distress, and the fluid exudation diminished; and with especial care regarding nutrition, etc., considerable benefit sometimes follows.

ROOSEVELT HOSPITAL.

ACUTE PLEURISY.—To diminish the severity of the inflammation, DR. FRANCIS DELAFIELD employs *blood-letting or counter-irritation.* When the patient is young and robust and the pain very severe, he applies wet cups immediately to the affected side. In asthenic or elderly persons, or where the pain is of a milder character, dry cups or blisters usually suffice. In all cases, however, he directs that the counter-irritation be rapid and decided. For the pain, if necessary, he gives *opium* in moderate dosage, either by the mouth or hypodermically. In sthenic patients with much fever, he also administers *aconite* in small doses and *spirit of mindererus.* After the acute symptoms have subsided, counter-irritation is continued by means of blisters, and diuretics given internally; at the same time supporting the strength of the patient with tonics and good, nutritive food. In acute pleurisy occurring with Bright's disease where there is more or less œdema of the face, etc., he applies a blister to the chest, and orders:

℞. Potass. iodid. . . . grs. x.
Syrup. ferri iodid. . . m. xxx.
M. Sig. Dose, three times daily.

This is often followed by the most favorable results.

SUBACUTE PLEURISY.—In very mild cases where the effusion is slight, DR. DELAFIELD advises that the patient stop work altogether, if possible, and take plenty of good food and rest. With this he combines the occasional application of small blisters over the site of the pleurisy. As a rule, however, his treatment is directed to getting rid of the fluid, and supporting the patient with tonics and nourishing diet. For the effusion he resorts to persistent *counter-irritation* by means of blisters, combined with the administration of diuretics. One blister is applied at a time, each succeeding one to be placed in position as the former heals. For diuresis he gives *digitalis* and the *iodide and acetate of potassium*. If after some time no success attends this method, it is discontinued and tonics tried for a while; then again alternating with counter-irritation and diuresis. For a tonic, the following is often made use of at this hospital:

℞. Tinct. ferri chlor. . . ℥ xii.
Strych. sulph. . . . grs. xvi.
Syrup. simp.
Aquæ . . . . āā Oiv.
M. Dose: Two teaspoonfuls.

DR. DELAFIELD'S indications for immediate aspiration are, (*a*) when the fluid accumulates so rapidly as to threaten danger from dyspnœa, and (*b*) when the fluid remains unabsorbed and the patient steadily

deteriorates in health. If the effusion does not disappear and yet the patient continues in a fair condition, he advises the above treatment even for months, before resorting to tapping.

EMPYEMA.—In children, DR. DELAFIELD considers *aspiration* best, repeated as often as indicated. In doing this he prefers to use the trocar and canula instead of the usual aspirating needle. In adults, however, he more frequently makes a *free incision* in the chest wall, selecting, as a rule, the sixth intercostal space in the axillary line posteriorly, introducing a drainage tube and establishing a permanent opening. If the pus is small in amount or sacculated, then the aspirator may be used. Washing out the pleural cavity with either water, carbolic acid solution, or a weak solution of zinc chloride, he considers a somewhat dangerous procedure, although it is not infrequently resorted to. For constitutional treatment, he administers tonics, *cod liver oil*, nutritious food, etc., and advises a change to a warmer climate. The following excellent preparation of cod liver oil is used at this hospital:

℞. Ol. morrhuæ . . . . ʒ ii.
Spts. lavandulæ co.
Vini gallici . . . . āā ʒ i.
M. Sig. Dose.

When, however, the aspirator has been employed and the patient shows poor nourishment, with fever, exacerbations, and night-sweats, which tonics, quinine, etc., fail to improve, both DRS. DELAFIELD and

DRAPER advise that a *free opening* be made, the pus evacuated, a drainage tube introduced and the chest cavity washed out with a warm solution; for this purpose sometimes using a solution of boracic acid, grs. v–℥ i., or a warmed carbolic acid solution. The full Lister dressing is usually employed in the operation.

FIBROUS PLEURISY.—DR. DELAFIELD applies persistent *counter-irritation* over the affected side with iodine for many months. This he also combines with the administration of those agents which improve the strength and nutrition, such as *iron*, *cod liver oil*, or cream, etc., and advises the patient to seek a warm climate during the winter months. The formula for the iodine tincture employed at this hospital is as follows:

℞. Iodinii . . . . . ℥ iiss.
Potass. iodidi . . . . . ℥ ss.
Alcoholis . . . . . ℥ xii.
Aquæ . . . . . ℥ iv.
M.

PRESBYTERIAN HOSPITAL.

ACUTE PLEURISY.—When there is a condition of high temperature, with an excruciating pain which is only partially allayed by opium, it is found that one or two *leeches* applied over the affected side relieves the pain almost instantly and for a long time.

SUBACUTE PLEURISY.—As a rule, DR. HADDEN first places the patient on tonic and diuretic treat-

ment. This is continued for a time, after which, if the fluid is not reduced by this means, aspiration is resorted to.

EMPYEMA.—When the effusion becomes purulent, DR. HADDEN favors the establishing of a *permanent opening* with drainage, and washing out the cavity daily.

ST. FRANCIS' HOSPITAL.

ACUTE PLEURISY.—At the onset of the attack, with high temperature, rapid pulse and respiration, and severe pain, DR. J. H. RIPLEY gives the following with great advantage:

℞. Tinct. aconiti rad. . . . gtt. xx.
Tinct. opii camph.
Spts. ætheris nitrosi . . . āā ℥ ss.
Liq. ammon. acet. . . . ℥ v.
M. Sig. A tablespoonful every three hours.

Where considerable prostration is present, and the temperature continues high, *quinine* is given in large doses and stimulants administered freely. When, in these cases, the effusion is abundant, and dyspnœa marked, he uses the following:

℞. Tinct. digitalis . . . . ℥ i.
Potass. acetat. . . . . ℥ ii.
Aquæ ad. . . . . ℥ iv.
M. Sig. A tablespoonful every three hours.

Should, however, the dyspnœa become intense from the excessive increase of fluid, and other means fail to relieve, DR. RIPLEY resorts to aspiration at

once, and often with excellent effect on the exudation.

EMPYEMA.—DR. RIPLEY is in favor of making a *free incision* in the chest wall, evacuating the pus, and inserting a drainage tube.

ST. LUKE'S HOSPITAL.

ACUTE PLEURISY.—DR. C. W. PACKARD advises early removal of the sero-fibrinous exudation, so that the lung may re-expand at once on withdrawal of the fluid. For if time has been given for the formation of tough and strong membranes, the lung may be tied up by adhesions so that it cannot get free for a long time—sometimes not at all, and is thus left in a favorable condition to take on disease and run into fatal phthisis. A latent pleuritic effusion, the result of a low grade of inflammatory action, and containing very little fibrin, he believes may be safely left for many weeks. But in acute pleurisy, when the ordinary remedies have failed to bring about absorption, he thinks that three weeks is the outside limit of safety; and, in such cases, by drawing off even a part of the fluid he allows the lungs to expand and break the still tender bands of exudation present.

EMPYEMA.—DR. PACKARD considers the demand for *early operation* imperative. When, after aspiration, the pus is decreasing and the constitutional disturbance is moderate, and especially in young subjects, he would hope for ultimate cure by aspiration. But if the pain and irritation continue severe and the pus rapidly re-accumulates, he advises that the pleu-

ral sac be opened by an incision large enough to admit of a ready evacuation of its contents and the washing out of its cavity.

In regard to the surgical treatment of this disease Dr. A. C. Post believes in the superiority of the radical operation. He thinks it highly desirable to make a *free incision*, as the fluid is often so viscid that it will not flow through the needle of the aspirator. By this practice he has frequently obtained marked results in cases where relief had not followed aspiration. This he finds especially true of children.

CHARITY HOSPITAL.

Acute Pleurisy.—In children, at the commencement, Dr. J. Lewis Smith directs his treatment toward reducing the inflammation and limiting the exudation. For the former indication he directs that blood be abstracted by the application of *leeches*, two in a child under two years, or three in an older one. He insists, however, that this be done only at the commencement of acute primary pleurisy in robust children, and then only leeches should be used. He also employs other, and what he frequently considers better, means for this purpose, namely, a mild rubefacient composed of:

Mustard	one part.
Linseed . . .	sixteen parts.

This is covered with oil-silk and applied twice daily. He objects to the use of blisters at this early stage, as he finds that it increases the area of imflamma-

tion. The application of cold is also objected to. DR. SMITH further resorts to the cardiac sedatives, *aconite* or *veratrum viride*, according to the age of the child; but advises that they be administered with care and their effects closely watched. For infants he prefers *quinine* and *digitalis*. Opiates are also used for the pain and cough, on some occasions giving *pulv. Doveri, grs. i-iii. every three hours.* He frequently prescribes the following with very excellent service in these cases:

℞. Tinct. ipecac. co. . . . gtt. xvi.
Tinct. aconiti . . . gtt. viii.
Syr. tolutan. . . . ʒ ii.
M. Sig. Half a teaspoonful every two hours.

SUBACUTE PLEURISY.—For the removal of the fluid DR. SMITH first employs other measures before proceeding to aspiration. In adults he finds the hydragogue cathartics very useful; but in children he considers them too depressing, and obtains more satisfactory results from diuretics. He gives:

℞. Potass. acetat. . . . . ʒ ss.
Infus. digitalis . . . . ʒ ii.
M. Sig. A teaspoonful every six hours.

The diet is made full and nutritious, with but little fluid. His treatment, however, varies with the indications of each special case. When the appetite and general health are good, and no symptoms due to the presence of fluid are manifest, but little is done in the way of medication. When such symptoms are prominent, and there is no evidence of dimin-

ishing fluid, *thoracentesis* is resorted to. His indications for performing this operation are as follows: (a) where the effusion completely fills one pleural cavity, compressing the opposite lung; (b) in double pleurisy when the sacs are half filled; (c) where severe attacks of orthopnœa are present; and (d) when the pleural cavity is half filled with fluid, which has existed for one month. For the operation DR. SMITH prefers to use the aspirator with a trocar and canula attached, instead of the usual aspirating needle; thus avoiding the danger of injuring the lung, which not infrequently occurs where the needle is used, either from the suction force employed or by occasional moving of the point of the needle to liberate it from particles of fibrinous material. Where the fluid is sero-fibrinous he uses the small trocar and allows the opening to close, one tapping being usually sufficient.

DR. BEVERLY ROBINSON performs thoracentesis (a) in all cases where there is imminent danger to life from presence of the effusion; (b) in all cases without delay when the fluid is abundant; and (c) in cases of moderately or appreciably large effusion. In these latter instances he claims that if the use of the aspirator is supported by purgatives and diuretics in robust patients, and more particularly by tonics and moderate stimulation in those who are weakened and losing appetite and flesh, that the re-accumulation of the fluid, if drawn off during the formative or ascending period, is neither necessary nor probable; nor does thoracentesis practiced during the

febrile period, have any injurious effect upon the ultimate course of the effusion. By withdrawing a portion of the fluid, also, the absorbents are relieved from pressure, and can more readily perform their function.

EMPYEMA.—When the effusion has become purulent, DR. SMITH proceeds to evacuate it. For this purpose he employs the large trocar, passing it to the depth of about five-eighths of an inch. The canula is then attached to the reversible *aspirator*, the fluid withdrawn, and the cavity washed out with a carbolic acid solution of about 1-100. A fistulous opening is then established by introducing two threads, double, and permitting them to remain. If the pus is fetid the washing out is repeated every one or two days, otherwise not. By this means he usually finds improvement attending each aspiration. Where, however, after each tapping, soon as the pus re-collects the patient becomes worse, he resorts to *free opening* with drainage. In all cases, DR. SMITH urgently advises great care in aspirating. He would never allow the point of the aspirator-needle to remain in the chest while suction was being made.

MT. SINAI HOSPITAL.

SUBACUTE PLEURISY.—In children where there is much fever, DR. JACOBI gives *quiniæ sulph., grs. viii. daily* until the temperature is reduced. To lessen the amount of fluid, in some instances he applies *counter-irritation* by means of blisters, iodine, etc. This, however, is quite annoying and where the child

is feeble it needs all the sleep possible. In such cases he uses diuretics, giving *potassium bitartrate*, ʒ *i–iss. daily*, and,

℞. Potass. iodid. . . . grs. v.
Aquæ q. s.
M. Sig. Dose, four times daily.

With these he employs diaphoresis by means of the cold pack, or, where the feet do not re-act, heat is also applied to those parts. In weak and enfeebled children he considers the hot-water pack better, combined with which he administers *liquor ammon. acetat.*, ʒ *ss.* in a cupful of hot milk.

Dr. Jacobi also uses *jaborandi*, at times, preferring pilocarpine, however, as its effects of nausea and salivation are less marked. This he gives hypodermically, as follows:

℞. Sol. pilocarpine (2 per cent.) . m. xv.
Sig. Dose, for children.(m. xxx. to adults).

Profuse sweating usually follows immediately, continuing from half-an-hour to one hour, which he finds of great service.

Empyema.—When suppuration takes place, Dr. Jacobi immediately resorts to evacuation, sometimes employing the *aspirator*, or in many instances making a free opening with drainage.

Surgery and Antisepsis.—In regard to the surgical and antiseptic measures to be adopted, the following will very generally apply: In case the intercostal space is very narrow, a section of the rib at or near the most dependent portion of the cavity

may be removed. After evacuation of the pus, the pleural cavity should then be washed out with a weak solution of carbolic acid, and a drainage tube introduced, transfixed with a wire or long needle to prevent its slipping into the thorax. A thick Lister dressing is now to be applied which will absorb the escaping pus. For the first ten days the dressing is to be renewed daily. It is also essential that the patient be cautioned to assume frequently a position which will facilitate exit of the discharge. The incision may be made preferably at the angle of the rib posteriorly. If incision through a single space be not sufficient, a double incision should be made or a section of the rib removed. If the discharge does not become offensive after the first washing-out, it need not be repeated. The drainage tube may be changed for one of smaller size as the case progresses, and should be removed and cleaned at each dressing, since it may become occluded by pus or granulations. As the pus diminishes the tube may be replaced by a tent of gauze and this finally removed. It is to be discontinued, however, only when the discharge has finally ceased.

HYDROTHORAX—HYDROPNEUMOTHORAX.

DEFINITION.—A simple, non-inflammatory effusion into the pleural cavities, occurring in the course of wasting diseases, with Bright's disease and general anasarca. *Hydropneumothorax.*—An effusion of fluid with gas or air in the pleural cavity.

NEW YORK HOSPITAL.

HYDROTHORAX.—If the effusion be slight, DR. W. H. DRAPER administers diuretics, diaphoretics and cathartics; but he finds that these fail in the majority of cases, more particularly if the fluid is in large amount. *Aspiration* he considers the only reliable means of relief; this is prompt, efficient and should not be postponed, especially where dyspnœa is severe. He advises that it is never safe, however, to abstract all of the fluid at once, as its sudden removal may cause fatal syncope. His plan is to tap in the erect position, allowing the flow to continue until the breathing is relieved; the operation to be repeated soon as the dyspnœa again appears. Saline cathartics and diuretics also afford much benefit. Frequently by this means and attention to the diet, which should consist largely of albuminous

foods and diluent drinks, the patient is greatly improved.

HYDROPNEUMOTHORAX.—In cases where a circumscribed empyema suddenly opens spontaneously into a bronchial tube, and prostration becomes extreme, DR. DRAPER advises that immediate and vigorous stimulation is demanded. He gives:

℞. Spts. vini gall. . . . . ℥ i.
Infus. digitalis . . . . ʒ i.
Ammon. carb. . . . . grs. v.
Sig. Dose, every hour.

BELLEVUE HOSPITAL.

HYDROTHORAX.—Simple hydrothorax is treated by DR. LOOMIS as an ordinary dropsy, with diaphoretics, diuretics and hydragogues. In severe cases where instant relief is demanded, the aspirator is resorted to.

DR. ALONZO CLARK administers saline diuretics and digitalis. His favorite among the diuretics is potassium carbonate, which he prescribes thus:

℞. Potass. carbon. . . . grs. xx.
Aquæ . . . . . ℥ ss.
M. et add
Succi limonis recent . . ℥ ss.
Sig. Dose, every two hours.

With this he also gives,

℞. Infus. digitalis . . . ʒ i-ii.
Sig. Dose, three times daily.

In many instances he advises the steam-bath, taken

at night, with much benefit, combined with friction over the entire body in the morning.

HYDROPNEUMOTHORAX.—If seen at the moment of attack, DR. LOOMIS gives *morphia* hypodermically two or three times daily. After which, and the imediate effect of the perforation is recovered from, the system is supported by stimulants and good food. In extreme cases, where the fluid is excessive in amount, and accompanied by high fever with severe dyspnœa, a free opening is made, although he considers this procedure only palliative.

DR. ALONZO CLARK aims to prolong life to the utmost by the administration of good food and *stimulants*. He also employs some counter irritant, applied to the chest, such as zinc iodide. A permanent opening is also made to allow escape of the pus.

DR. FRANCIS DELAFIELD advises that a free incision be made and a permanent opening established. Should symptoms of collapse be prominent, he cautions that the administration of stimulants be not delayed. *Alcohol* should be given in full doses to bring the radial pulse full and strong.

PULMONARY PHTHISIS.

DEFINITION.—Lesions commencing with induration of a lobe or lobule of the lungs, ending in disintegration of the new material and of the textures involved in the induration; the formation of caverns, and the accumulation and constant discharge of purulent secretion, with or without the growth of miliary tubercles (Aitken).

BELLEVUE HOSPITAL.

DR. LOOMIS places the patient on a simple, yet highly nutritious diet, administered frequently and to the full of digestion. Milk is considered best, or milk with yolk of eggs, especially in the later stages. For internal medication, his means are of course varied. To control the fever, he prefers quinine as the most reliable, and also believes that no other drug exerts so great influence over the early stage of catarrhal phthisis. He usually gives:

℞. Quiniæ sulph. . . . . grs. xx.

Sig. To be taken daily, in one or two doses.

This amount is increased or diminished according to indications. Unless the fever subsides, however, he continues it up to the verge of cinchonism. Inhalations are objected to, except in the catarrhs of the

early stage when they are sometimes attended with marked improvement. For the vomiting various remedies are at times employed. Champagne taken with the food is often very serviceable; also hydrocyanic acid, pepsin, etc. DR. LOOMIS, however, places most reliance upon the following: he directs the patient to take, every half-hour, from half to a teaspoonful of raw scraped beef, made into a sandwich; this is to be continued for forty-eight hours, during which the patient must be kept quiet and in the recumbent position. In regard to cod liver oil, he advises that it be combined with an alkali, avoiding stimulants if possible. For administration, he generally begins with *olei morrhuæ*, ʒ *i.* once or twice daily after meals. This is afterward increased to ℥ ss. three times daily. The following emulsion is very often used at this hospital:

℞. Olei morrhuæ . . . . ℥ ii.
Aquæ calcis . . . . . ℥ ss.
Syr. calcis lactophosph. . . ℥ iss.
M.

In fibrous phthisis, cod liver oil may be taken if it agrees with the patient, but he finds, as a rule, that it does not benefit this class of cases. In his experience greater reliance is to be placed on *arsenic*, *iron*, and *strychnia*. These he believes to be most serviceable of any, particularly a combination of arsenic with iron. The following is from this hospital:

℞. Quiniæ sulph. . . . . ʒ i.
Ferri redacti . . . . . ʒ iss.

Acid. arseniosi
Strychniæ . . . . āā grs. iii.
Confect. rosæ . . . . q. s.
M. ft. pil. No. lx.

Alcohol he considers of service only when it increases the appetite and digestion of the patient, and stimulates the physical powers. In the earlier stages, however, he does not advise the use of stimulants. Where anæmia is present, with no fever, a course of *iron* is administered with much benefit. The night-sweats are often controlled by *quinine* in large doses. When this fails, DR. LOOMIS prescribes digitalis, opium, and quinine in combination, with very good result. *Aromatic sulphuric acid* is also found very efficient for this purpose. Or at times *zinc oxide* is used. Sponging the body with cold or warm water, or with water rendered slightly acid, is also employed beneficially. For the diarrhœa, cod liver oil combined with the hypophosphites is used with advantage. Where these fail, however, he almost invariably finds the following successful:

℞. Bismuth. . . . . grs. x.
Morph. sulph. . . . . gr. $\frac{1}{12}$.
M. Sig. To be taken after each movement.

To relieve the cough, *opium* is employed only as a last resort. Chloroform is preferred, the inhalation of a few drops often giving complete relief. Counter-irritation by means of cups is employed with great benefit when local pleurisies occur.

Besides the medicinal treatment of phthisis, DR.

LOOMIS resorts to various hygienic measures which are equally important. In general terms, he advises removal to a climate which is conducive to health, at the same time regulating the habits, exercise, occupation, etc. *Friction* over the chest with a coarse towel, practiced night and morning, is also advised with much benefit. This will also, in many instances, entirely relieve the neuralgic pains which are frequently so distressing. A plentiful supply of fresh air is considered highly important, but all exposure to cold must be carefully avoided; flannel should be worn next the body at all times. As regards climate, he can give no absolute rules; this must be decided by the peculiarities of each particular case, and by the experience of the patient previous to the phthisical development. In fibrous phthisis, however, when shortness of breath becomes a prominent symptom, with paroxysmal cough, vomiting, and occasional hæmoptysis, DR. LOOMIS recommends the patient to seek some region of high altitude, where he will be obliged to breathe but little, such as is offered in Colorado. With this, nutrition is to be sustained and carried to the highest point, pursuing at the same time a life of regular habits with plenty of out-door exercise. This he has often found to be exceedingly beneficial.

DR. A. A. SMITH highly recommends the following to relieve the cough in phthisis, when it is desirable to avoid the use of opium:

℞. Spts. chloroformi
Acid. hydrocyan. dil. . . āā ʒ iss.

Tinct. hyoscyami . . . ℥ ss.
Aquæ camphoræ ad . . . ℥ iv.

M. Dose: A teaspoonful in water ℥ ss. every two hours.

DR. ALONZO CLARK advises that successful treatment must be assisted by climatic effects, with abundance of fresh air and good nourishment. Other things being equal, an elevation of 1500 feet is better than at the sea level. A dry climate is to be desired, hence the sea air only affords temporary benefit, and then is apt to be unfavorable. He considers the interior more suitable, and a warm climate is also preferred, as in cold places he finds that the patient gets very little fresh air, unless he is strong enough to live out of doors, hunting, etc. On the whole, however, DR. CLARK becomes more and more disinclined to send patients away from their homes.

In addition, he also advises *friction* on rising in the morning, as of excellent service; the entire body being briskly rubbed. For this purpose he finds the hard hand of a laboring-man the best means of application; failing this, a flannel may be used. If the patient sleeps in a warm room, it is a good plan to have the body sponged over at night and wiped dry with a towel at once. The inhalation of *oxygen*, a gallon at a time, has, in his judgment, very kindly effects. For the loss of appetite, out-door exercise and fresh air, together with friction, is very beneficial. He also supplements this by the administration of infusion of quassia or calumbo; or *citrate of iron and quinine* dissolved in a little water and lemon

juice added; or compound tincture of gentian with a little sherry; all are considered excellent by him. The following is very often employed at this hospital:

℞. Ferri et quiniæ citr. . . . ʒi.
Vini xerici . . . . ℥ii.
M. Dose: A teaspoonful.

Also:

℞. Tinct. cinchonæ co.
Tinct. gentianæ co. . . āā ʒi.
M. Dose: A teaspoonful.

In the summer months Dr. Clark prepares a very excellent *tonic* thus: Take of *tansy two parts*, and of *wormwood one part;* place in a common wine-bottle, and fill with *sherry wine*. To control the night sweats he gives:

℞. Acid sulph. aromat. . . . gtt. xv.
Aquæ q. s.
Sig. Dose, three times daily.

This if necessary is increased to gtt. xx, xxx, or xlv. Or he sometimes prescribes *quinine, in doses of grs. x-xxx.*

In using quinia, he advises that to obtain benefit, the effects of the drug must be produced. In other cases he gives *atropiæ sulph.*, *gr.* $\frac{1}{100}$-$\frac{1}{60}$ at night. Or again, he finds the following is most serviceable:

℞. Zinci oxidi . . . . grs. v.
Ext. hyoscyami . . . grs. ii.
Sig. Dose.

In still other instances, sponging the body at night

with common whiskey, warmed, and to which has been added all the alum or borax it will dissolve, is very efficient.

For the diarrhœa, he prescribes:

℞. Bismuthi subnit. . . . grs. x.
Morph. sulph. . . . gr. $\frac{1}{12}$.
Sig. Dose.

When hæmoptysis is present, *ergot* may be used with a certain amount of benefit; but DR. CLARK obtains better results from *tying off some of the blood, e. g.*, placing a ligature about one arm for a while, and then gradually letting it free. If, however, the hæmorrhage continues for any great length of time, this should be freed and the opposite arm tied, and thus alternate. In regard to the cough, he considers an ordinary cough beneficial and should be let alone. When severe, opiates are given. Inhalation of steam is also employed with great relief to the mucous membrane.

The following is a favorite with him:

℞. Ext. opii . . . . gr. iss.
Aquæ . . . . ℥ i.
M. Sig: To be inhaled by the spray.

In other cases he orders the following:

℞. Spts. æther. co.
Tinct. tolutan. . . . āā gtt. xv.
M. Sig: To be inhaled from a warmed cup.

He has lately been prescribing the *hypophosphite of lime, in doses of grs. v. three times daily*, and continued for several months; and, also, a *dilute solution*

of creosote or *carbolic acid*, of the strength of 1–200, to be inhaled in the form of a spray from the atomizer.

For an expectorant he almost invariably prescribes:

℞. Syrupi senegæ . . . . ℥i.
Tinct. opii camph. . . gtt. xv.
M. Sig: Dose.

Inhalation of the *benzoate of soda* is a remedy lately employed by the French, which, DR. CLARK states, has given some very remarkable results.

As regards the *diet*, this he would have of the most nutritious kind. When the patient's appetite is good, that is, before the lungs are very considerably diseased and he is able to be up and about, plenty of fresh air is advised, together with an abundance of good food. The character of the food, he directs, should be to a certain extent oily, consisting of meat, beef-steak is good, and milk, or cream, or *cod liver oil*. This latter he administers a little more freely than is commonly prescribed; a tablespoonful thrice daily is considered by him as hardly sufficient. He also advises a food prepared thus: Take one pint of wheaten flour, place in a bag and boil; the water to be changed as fast as it becomes loaded with starch, and the process continued until the gluten in the bag forms a cake. This broken with milk DR. CLARK considers the *best food* for these patients. In incipient phthisis he orders half-a-pint of cream on hominy or oatmeal, or with a baked apple, to be taken three times daily.

The following preparation of cod liver oil is constantly employed at this hospital:

℞. Olei phosphorati (1 per cent.) grs. c.
Ætheris . . . . fl. ʒ ii.
Olei morrhuæ q.s. ad . . fl. ℥ xvi.
M. fl. ℥ ss. contains gr. $\frac{1}{30}$ of phosphorus.

Dr. Austin Flint gives quinine for the high temperature in many instances, as follows:

℞. Quiniæ sulph. . . . grs. xv.
Sig: Dose, to be taken in the morning.

This, together with grs. v. in the evening, he often finds, controls the marked exacerbations.

Dr. E. G. Janeway advises, in regard to sending patients away from home, that during the winter season they should remove to another climate; to the South, to Colorado, or to California. Not, however, with the expectation of getting well, but that they may be in a climate where they will be more comfortable, while they do live, than at home. By this means he observes that patients often prolong life from three to five years. The following is the formula for Dr. Janeway's cough mixture:

℞. Syrup. tolutan.
Syrup. pruni virg.
Tinct. hyoscyami
Spts. æther. co.
Aquæ . . . . āā fl. ʒ i.
M. Dose: A teaspoonful.

At this hospital, when in patients of phthisis the fever proves very troublesome, with night sweats,

the following is prescribed, in many instances, with the best effect; the temperature falls, the pulse becomes more natural, and the accompanying symptoms are temporarily alleviated.

℞. Acid. sulphur. dil. . . gtt. xx.
Quinæ sulph. . . . grs. v.
M. Sig. Dose, every three hours.

When there is much gastric disturbance, with dyspeptic symptoms, etc., the following is found of excellent service:

℞. Ferri et bismuthi citr. . . ʒ iv.
Aquæ . . . . . ℥ iv.
M. Dose: One or two teaspoonfuls.*

In children, the following cough mixture is used:

℞. Tinct. opii camph.
Spts. ammon. aromat. . āā ʒ v.
Ext. ipecac. . . . . ʒ ss.
Syrup. pruni. virg. . . . ℥ i.
Aquæ . . . . . ℥ vi.
M. Dose: A teaspoonful.

PRESBYTERIAN HOSPITAL.

Dr. F. A. Burrall places the patient on the use of stimulants, tonics, and cough mixtures. For the dyspnœa, he finds that *quebracho* affords great relief, in many instances when all other remedies have failed; given thus:

℞. Ext. quebracho fl. . . m. xxx–xl.
Sig. Dose, every three hours.

* Ferri et bismuthi citras contains equal parts of citrate of bismuth and ammonio-citrate of iron.

By this means the respirations are lessened from three to eight per minute, and the breathing rendered much easier.

In many cases of patients in the third stage of phthisis with marked anæmia, rapid emaciation, loss of appetite, vomiting, hectic, and frequent and exhausting night-sweats, when the usual treatment of cod-liver oil and iron, combined with the most nutritious diet, is unavailing, *enemata of defibrinated blood* are administered with great benefit. The injections are given at bed-time, usually commencing with ℥ iv. of defibrinated blood to which has been added *chloral hydrate grs. iv.* The general treatment is also continued, or a diet of milk and beef-tea ordered. After several injections have been practiced, if the rectum does not tolerate this amount, it is reduced to ℥ ii.; by continuing this for a few days, and then adding *tincture of opium gtt. v.* to each ℥ iv. of the blood, the full amount is usually retained without difficulty. If constant vomiting is present, *cerium oxalate, grs. iv–vi. every night and morning*, is given with great advantage. Should the vomiting still persist in spite of all measures to control it, the injection is given every five or six hours, and *milk and lime-water* administered in very small quantities. By this means the vomiting is often entirely subdued. In such cases, to prevent irritation, the rectum should be washed out once in twenty-four hours, and gtt. ii–iii. of laudanum added to the injection as the irritation increases. As a result of this treatment, it is found that in many cases the appetite returns, the vomiting

disappears, the patient becomes less anæmic, night sweats diminish in frequency, the body weight increases, and a steady improvement in the general condition of the patient follows.

In young women of phthisical tendency, where there is a condition of anæmia and chlorosis, DR. A. H. SMITH prescribes the following tonic:

℞. Hydrarg. chlor. corros. . . grs. i–ii.
Liq. arsenisi chlor. . . . fl. ʒ i.
Tinct. ferri chlor.
Acid. hydrochlor. dil. . āā fl. ʒ iv.
Syrupi . . . . fl. ℥ iii.
Aquæ ad . . . . . fl. ℥ vi.

M. Dose: A dessertspoonful in a wineglassful of water, after meals.

This often affords the greatest benefit, the general condition and body-weight of the patient improving in a remarkable manner. It should not be given for a longer period than two weeks at a time.

NEW YORK HOSPITAL.

In phthisis associated with syphilis, so-called syphilitic phthisis, DR. W. H. DRAPER places the patient immediately under specific treatment. In one case with marked syphilitic history, the patient having also rheumatism with subjective epileptic attacks, he ordered:

℞. Hydrarg. biniodid. . . . gr. $\frac{1}{32}$.
Potass. iodidi . . . grs. x–xv.
Sig. Dose, three times daily.

Under this treatment the symptoms rapidly abated. In another syphilitic case the patient had suffered from laryngeal and pulmonary phthisis for eight years; although late in the disease, yet the same treatment was prescribed, followed by considerable amelioration of the symptoms, and marked improvement constitutionally. The following is an excellent method of administration, and very much used at this hospital:

℞.	Hydrarg. biniodid. . . .	gr. i.
	Potass. iodidi	ʒ v.
	Syr. aurant. cort. . . .	℥ ii.
	Tinct. card. comp. . . .	ʒ ii.
	Aquæ q. s.	℥ iv.

M.

CHARITY HOSPITAL.

Dr. Beverly Robinson administers the *compound syrup of the hypophosphites*, four times daily, for several months. This he considers the most efficient remedy in the treatment of catarrhal phthisis. When practicable, however, he prefers to use the *hypophosphites in doses of grs. x.*, taken in a teacupful of milk upon rising in the morning. The following combination is used at this hospital:

℞.	Calcii hypophosphitis .	grs. cclvi.
	Sodii " . .	grs. cxcii.
	Potasii " . .	grs. cxxviii.
	Ferri sulphatis . . .	grs. clxxxv.
	Acidi hypophosphoroci (1.036)	fl. ʒ ix.

Sacchari . . . . . ℥ xii.
Aquæ q. s. ad. . . . fl. ℥ xviii.
M. Dose: A teaspoonful.

Cream and whiskey are also given with the diet. If this destroys the appetite, he substitutes small doses of cod liver oil instead, combined with the hypophosphites. When bloody sputa becomes frequent, he gives *ext. ergotæ fl., m. x.* If the hæmorrhage is more profuse the dose is increased; and when abundant he administers *ergot in ℥ i. doses, p. r. n.* With this, small pieces of cracked ice are swallowed constantly.

If night-sweats become troublesome, DR. ROBINSON often controls them by *gtt. v-x. of tinct. belladonnæ*, given at bedtime. Or he sometimes uses the alkaloid, commencing with *atropine, gr. $\frac{1}{100}$ hypodermically.* This he finds more effectual. If, however, it fails to afford relief, he then resorts to large doses of *dilute* or *aromatic sulphuric acid*, given in the acid infusion of roses. This, he advises, should be taken through a glass tube to protect the teeth, and the mouth washed after swallowing. In his experience quinine does not arrest the night-sweats of phthisis. To control the fever, however, he finds it very serviceable. For this purpose DR. ROBINSON begins with *quiniæ sulph. grs. v. three times daily.* He then increases the dose, as indicated, to grs. x-xv. For the cough, he directs that opiates should never be used until absolutely compelled. He first tries *chlorodyne*, administered as follows:

℞. Liq. chloroformi co. . . gtt. x-xx.
Sig. Dose, p. r. n.

This is considered by him as superior to any other anodyne for the cough of phthisis. Other means are, however, employed at this hospital. In many cases, relief is obtained by the administration of *grindelia robusta*. Or, atropia is sometimes used with benefit, in doses of gr. $\frac{1}{100}$ and upward. *Hydrocyanic acid and potassium cyanide* are serviceable in certain instances, but they are found not to exercise any decided influence when administered in moderate doses. *Morphia*, as a rule, always gives immediate relief, but frequently causes nausea. The following is found to be of greater general value, and its administration is also devoid of any nauseating effect:

℞. Chloral. hydratis . . . grs. x.
Aquæ . . . . . q. s.
M. Sig. Dose.

When the sputa is abundant, DR. ROBINSON gives:

℞. Aquæ creosoti (U. S. P.) . . ℥ss.
Sig. Dose.

He finds this exceedingly serviceable, besides tending to diminish the frequency of the cough. For the appetite, when other means fail he places most reliance on nux vomica. Counter irritation is at times resorted to, preferably by iodine, as, besides being a good local remedy, he also attributes its beneficial influence to effects on the respiratory tract by inhalation. Where, however, the phthisis has originated from acute lobar pneumonia, he uses a

succession of *camphorated fly-blisters;* the camphor sprinkled over the cantharides, he advises, makes its effects innocuous as regards the kidneys and bladder.

In tubercular phthisis, associated with general tuberculosis, to control the fever DR. ROBINSON applies iced flannel cloths, well wrung out and folded twice, constantly over the abdomen, until the body temperature is reduced to the normal. He also makes use of the following with great advantage:

℞. Pulv. digitalis . . . .
Pulv. quiniæ sulph. . . āā gr. i.
Pulv. opii . . . . gr. ss.
M. et ft. pil. No. i.
Sig. To be taken every four hours.

For the sweating, he administers hypodermics of atropia, as usual, as often as the abundance of perspiration requires. After the fever has considerably subsided, an emulsion of cod liver oil is given and continued for a long time. On this plan he has obtained very excellent results. The following is used at this hospital:

℞. Olei morrhuæ
Aquæ calcis . . . āā fl. ℥viii.
Olei cinnamomi . . . gtt. x.
M. Dose: A tablespoonful.

As an expectorant, the following mixture is very frequently employed:

℞. Tinct. sanguinar. . . . fl. ℥i.
Tinct. opii camph.
Syr. scillæ ,

Syr. tolutan. . . . āā fl. ʒ ii.
Aquæ q. s. ad. . . . fl. ℥ ii.
M. Dose: A teaspoonful.

In regard to *transfusion*, Dr. J. W. Howe has practiced it successfully both of milk and of blood, and, in some cases, with very marked benefit.

ROOSEVELT HOSPITAL.

Dr. Francis Delafield's treatment is in a great measure constitutional, by the administration of tonics and cod liver oil, and, if necessary, a change of climate. In young women of phthisical developments when there is a condition of marked emaciation, anæmia, chronic diarrhœa, and generally weakened constitution, he considers the immediate indication is to build up the general system by the use of *iron*, combined with the inhalation of *oxygen*. For the diarrhœa, he administers:

℞. Acid. hydrochloric. . . gtt. xx.
Tinct. opii . . . . gtt. iii.
M. Sig. Dose, four times daily.

By this means, combined with good food, etc., considerable improvement often follows. In other instances, at this hospital, the following is found very serviceable in checking the diarrhœa of phthisis:

℞. Resin. terebinth. . . . grs. iii.
Argenti nitrat.
Opii . . . . . āā gr. ¼.
M. ft. pil. No. i.
Sig. To be taken as needed.

If there is much fever, with more or less night-sweats present, DR. DELAFIELD often prescribes:

℞. Acid. sulph. aromat. . . m. xx.
Quiniæ sulph. . . . . grs. v.
M. Sig. Dose, every three hours.

Zinc oxide and *belladonna* are also used very efficiently, at this hospital, for the night-sweats; given thus:

℞. Zinci oxidi . . . grs. xxxvi.
Ext. belladonnæ . . grs. vi.
Ext. gentianæ . . . q. s.
M. ft. pil. No. xii.
Sig. Take one at night.

To prevent putrefaction of the secretions, he employs the systematic *inhalation of carbolic acid*, by means of the atomizer, or vaporized; care being taken that the inhalation shall penetrate to the smaller bronchial tubes. To diminish the bronchial secretions, when abundant, he finds the mineral acids most useful, usually giving *acidi sulphuric. dil., m. xv. four times daily.* If this fails, he tries belladonna, preferring the *sulphate of atropia;* or ipecac, giving *pulv. ipecac. gr. i. four times daily.* The following cough mixtures are very extensively employed at this hospital:

℞. Potass. iodidi . . . . ʒ ii.
Spts. æther. co.
Tinct. hyoscyami . . . āā ʒ vi.
Syrup. tolutan. . . . . ℥ i.
Aquæ . . . . . ℥ iii.
M. Dose: A teaspoonful.

℞. Ext. pruni virg. fl. . . . ℥ iii.
Sol. potass. cyanidi (gr. ii.–℥ i.)
Sol. morph. sulph. (Magendie) . āā ℥ ss.
Syrupi simp. . . . . ℥ xxviii.
M.

For the aphthæ of phthisis the following wash, which is at the same time antiseptic and stimulant, is used with gratifying results:

℞. Quiniæ sulph. . . . . gr. i.
Olei piperis nigris . . gtt. i.
Aquæ . . . . . ℥ i.
M Sig. May be applied with a brush, or the mouth rinsed with it.

MOUNT SINAI HOSPITAL.

The inhalation of the *carbolic acid* spray is practiced at this hospital with, in certain particulars, very excellent service. A solution containing two per cent. of the acid is employed. The most important effect of the inhalation is to reduce the temperature, in some cases two or three degrees; it also increases the amount of expectoration and checks the fetor of the sputa. Where it acts as an irritant salicylic acid is sometimes substituted, but with less influence on the temperature.

LARYNGEAL PHTHISIS.

DEFINITION.—A chronic ulcerative process developed in the mucous membrane of the larynx, slow in progress, and usually occurring in connection with pulmonary phthisis; characterized by progressive emaciation, change in the quality of the voice, more or less dysphagia, cough and expectoration.

NEW YORK HOSPITAL.

DR. W. H. DRAPER calls attention to the fact, that in treating patients of this disease they are often mistaken for cases of local laryngitis, as the lung lesion is not at all in proportion to the constitutional symptoms which accompany it. The larynx is consequently subjected to a long and painful course of treatment with local applications, stimulants, etc., until finally, the patient growing rapidly worse, a time arrives when it is discovered that the more serious trouble is pulmonary phthisis. For the local affection, all irritation to the parts must be carefully avoided. If the patient be a stone-cutter, or a weaver, this occupation must be given up. Or if a public speaker, or obliged to talk very loudly for any length of time, this must be stopped. To relieve the pain DR. DRAPER administers *opium* either by the mouth

or hypodermically ; or he makes use of the following topical application ;

℞. Morphiæ sulph. . . . . gr. ¼.
Cretæ præp. . . . . grs. ii.
M.

This he applies by insufflation directly on the ulcer. In all cases, however, he finds that treatment is very apt to be difficult, on account of the extreme pain from which the patient suffers in movement of the part. For the lung disease he administers constitutional treatment, consisting of fresh air, good food, freedom from anxiety, cod liver oil, etc., together with tonics and stimulants.

BELLEVUE HOSPITAL.

For cleansing the part, preparatory to more special treatment, Dr. F. H. Bosworth uses the following solution :

℞. Acid. carbol. cryst. . . grs. xii.
Sodii bicarbon.
Sodii biborat. . . āā grs. xxiv.
Glycerinæ . . . . ℥ iss.
Aquæ rosæ ad . . . ℥ viii.
M. Sig. Spray.

This he applies in the form of a spray, repeated several times until the ulcerated parts are thoroughly cleansed. If much pain or irritation is produced, he reduces the strength of the solution or changes it ; in the latter instance using the following :

℞. Sodii salicylat. . . . grs. x.

Sodii biborat. . . . . ℈i.
Glycerinæ . . . . . ℥i.
Aquæ rosæ ad . . . ℥viii.
M. Sig. Spray.

The former solution is, however, greatly preferred by him. He then applies an anodyne, as a rule, especially if pain has been caused by any of the previous applications. For this purpose, DR. BOSWORTH employs a five per cent. *solution of morphia*, with the addition of sodium or potassium carbonate to give it an alkaline reaction, and a small portion of mucilago acaciæ. He next uses an astringent, being guided in his selection somewhat by the effect and tolerance; of these, the following are in the order of his preference:

Zinci sulphat. . . . grs. x-℥i.
Argenti nitrat. . . grs. iii.-v-℥i.
Zinci chloridi . . . grs. iii-℥i.
Acid. tannici et glycerinæ . ℥i-℥i.
Liq. ferri persulph. . . m. xx-℥i.

Finally, he applies *iodoform* to the surface of the ulcer for its specific action, its effect being, in many instances, most gratifying. The formula generally employed by him is as follows:

℞. Morphiæ sulph. . . . grs. x.
Acid. tannici . . . . ℥ii.
Iodoformi . . . . . ℥vi.
M.

Sometimes he uses a saturated solution of *ether* m. xl-℥i. For applying these, the powder-insuffla-

tor or the spray is always preferred; the brush, sponge, etc., necessarily touch the diseased and sensitive parts, which he considers harmful, and advises that in all cases the treatment must be accompanied with the least possible irritation. Previous to the stage of ulceration the treatment is the same with the exception of the iodoform, which is used for its specific action in ulceration. *Inhalations*, as a rule, he considers of little or no value, and the steam atomizer as positively harmful. For using medicated solutions during the intervals of treatment, he finds the little cologne atomizer of the toilet most serviceable. The carbolized alkaline solution is employed, to which, if a sedative is indicated, he adds ʒ i of Magendie's solution of morphia to ℥ i. At the commencement, Dr. Bosworth believes it necessary to give daily treatment, or, in the earlier stages, as often as every second day. If the progress of the case be favorable, once a week, and later, once in two weeks, is found to be sufficient. All these measures failing to relieve *tracheotomy* is to be entertained. This he considers justifiable as a remedial measure when local remedies are unavailing, and before it is demanded by dyspnœa from œdema and stenosis. In addition to the above treatment, constitutional means are employed, such as cod liver oil, iron, quinine, etc., to build up the general condition of the patient.

SPASMODIC ASTHMA—HAY FEVER.

DEFINITION.—An affection characterized by spasmodic contraction of the bronchial tubes, causing intense dyspnœa, attended with loud wheezing, great anxiety, and the sense of suffocation; terminating by a gradual subsidence of the attack, with cough, at first dry, then accompanied by expectoration of mucus varying in amount and appearance. *Hay Fever.*—A catarrhal affection occurring during the months of May, June, and July, and generally ascribed to the emanations from newly-mown hay, or the various flowering grasses; disappearing spontaneously, it recurs annually at the specified period.

BELLEVUE HOSPITAL.

The treatment of spasmodic asthma is necessarily very variable, according to the peculiarities of each individual case.

DR. ALONZO CLARK sometimes directs the patient to inhale the smoke of *stramonium leaves*; this may be blown into a receiver (a hat) until it becomes filled, and then breathed. In other cases, he finds that inhalation of the fumes of burning *nitre paper* is more serviceable. Again, he frequently obtains relief by the smoking of *tobacco*, given to produce

sickness; but this remedy is of benefit only to those who do not use it habitually. *Ether* or *chloroform* inhaled are also beneficial, but attended with more or less danger. In the greater number of cases, however, he considers nitrite of amyl more efficacious, and finds that it will almost invariably cut short the attack at once. He gives:

℞. Amyli nitriti . . . . gtt. v.
Sig. To be inhaled from a cloth or sponge.

For a radical cure, DR. CLARK places more reliance upon *iodide of potassium*, and believes it to be superior to any other remedy. This he gives with moderate freedom for some time, and obtains complete and permanent cure in about one-half the cases. When all remedial agents fail he finds but one remaining resource which will invariably give relief, namely, travel and a change of residence. DR. CLARK does not doubt that there is a spot somewhere in the world for each asthmatic patient, where the disease will disappear never to return. As a general rule, he has found that the sea will accomplish this, but not always.

At this hospital, for the autumnal attacks of spasmodic asthma, especially if associated with pulmonary emphysema, the following prescription is employed, and found to be very serviceable:

℞. Potass. iodid. . . . . ʒ ii.
Spts. æther. co. . . . ℥ ss.
Syr. pruni virgin. . . . ℥ iv.
M. Sig. A teaspoonful four times daily.

DR. LOOMIS advises that the exciting cause, whatever it be, should receive prompt attention, aiming to remove it. When this is not practicable, or fails, the free admission of air is obtained and such a position of the patient secured which affords greatest freedom to respiration. His medicinal treatment varies. He considers it of importance to inquire of the patient what remedy has formerly been of benefit. In some he finds *ipecac* very serviceable, and has occasionally given complete relief by a single full dose. In others *opium*, *stramonium*, *chloroform*, or the fumes of *nitre paper* are most beneficial. Of these he prefers *morphia in doses of gr. ss., hypodermically.* Or, sometimes a combination of atropine with morphia affords speedier relaxation than either drug alone. In some of the wards at Bellevue the following is often used with very satisfactory results :

℞. Spts. æther. co.
Liq. morph. sulph. (U. S. P.) . āā. ℥ i.
M. Dose: A teaspoonful to a tablespoonful.

Strong, black *coffee* (without sugar or milk) is also employed by DR. LOOMIS with advantage, given as hot as the patient can bear it and upon an empty stomach. *Alcohol* similarly taken (hot and strong and to intoxication) is also found of great value. His prophylactic treatment consists in strict attention to hygienic and dietetic regulations. He mentions the fact that these patients are very apt to be dyspeptic, hence this condition should receive all necessary care and medication. Tonics, cod-liver oil, and iron are also administered, where there is much anæmia and mal-

nutrition. In some cases by giving *grs. v-x. of quinine daily*, he has been able to ward off the attack; but the withdrawal of the drug was immediately followed by a return of the symptoms. Finally, when the paroxyms are excited by the inhalation of irritant substances, the weather, atmosphere, etc., DR. LOOMIS advises a removal to some other locality, regarding which, however, each patient must ascertain for himself.

DR. W. H. THOMSON highly recommends the following in those cases of asthma associated with and dependent upon bronchitis, and with no dyspeptic symptoms:

℞. Tinct. belladonnæ . . . ʒ i.
Spirit. æther. co. . . . ʒ vi.

M. To be added to ℥ vi. of an emulsion of linseed oil and gum tragacanth, and flavored with oil of wintergreen.

Dose: A tablespoonful three times daily, one and one-half hours after meals; the last dose at bedtime.

In addition to this he also gives:

℞. Potass. iodid. . . . . grs. v.
Liq. potass. arsenit. . . . gtt. iv.
Aquæ ad. . . . . ʒ ss.

M. Sig. Dose, three times daily.

DR. AUSTIN FLINT finds quebracho of very great benefit for relieving the dyspnœa. He gives:

℞. Ext. quebracho fl. . . . m. xv.

Sig. Dose, every hour.

In some cases, relief from the most severe par-

oxysm is almost instantaneous; at times it fails, however, and only morphia is of service. In the asthma of emphysema and bronchitis he administers *cod liver oil* and tonics for a considerable period of time. Quebracho he also finds equally valuable in these cases. Regarding climate DR. FLINT considers Kansas and the surrounding country, more especially Colorado, as particularly beneficial to these patients.

HAY FEVER.—In the experience of DR. ALONZO CLARK very little good is to be found in remedial agents. As a palliative measure he sometimes derives temporary benefit by moistening the nares with a *weak solution of quinia* (snuffed up the nose), and protecting the air passages by an inhalation of a spray of the same solution. In other instances, *dilute hydrocyanic acid, in doses of gtt. i-ii.*, is given with benefit. Absolute cure, however, is to be obtained almost solely by a change of locality, thus avoiding the poison which produces the disease. For this object, DR. CLARK finds nearly the entire White Mountain region of this character. Fire Island he also considers a good remove. Also some of the mountain regions of Pennsylvania, and of the West, and along the shores of Lake Superior.

PRESBYTERIAN HOSPITAL.

DR. A. H. SMITH has had excellent results from the administration of *quebracho*. In many instances where the paroxysms of dyspnœa are intense in their severity, and other means fail, this drug often proves of greatest service. In such cases he usually gives

it in doses of *m.xl. of the fluid extract.* Sometimes with orthopnœa, cyanosis, and very labored breathing present, perfect relief has followed in a very short time. Also, in many cases, the attacks became less frequent until they finally completely disappeared. In one instance, where iodide of potassium, stramonium, nitre papers, amyl nitrite, belladonna, chloral, etc., had all been tried without avail, he gave:

℞. Ext. quebracho fl. . . m. xx.
Sig. Dose, three times daily.

Immediate relief followed. Another patient had suffered from spasmodic asthma of many years' standing; *quebracho, in* ʒ *ss. doses, three times daily,* was at once given, and afforded marked and permanent relief. Dr. Smith has also found this drug useful in almost every form of dypsnœa, and has no doubt that, in many cases, it will promptly fulfill this indication. As yet he has no evidence of any tendency to produce unfavorable after effects.

NEW YORK HOSPITAL.

Dr. W. H. Draper frequently uses quebracho with advantage, but he considers *opium* the only sure relief. This he gives by hypodermic injection, thereby causing less disturbance than by the stomach; beginning with small doses, as follows, and gradually increasing:

℞. Morphiæ sulph. . . . grs. lxxx.
Aquæ destil. carbol. . . fl. ℥ v.
M. et filt.
Dose: two to four minims.
This invariably affords relief.

ST. FRANCIS' HOSPITAL.

When recurring asthma is present as a symptom of Bright's disease, Dr. J. H. Ripley obtains prompt relief by the administration of hydragogue cathartics.

ST. LUKE'S HOSPITAL.

Dr. G. G. Wheelock finds quebracho, in doses of *m.xx-xl. of the fluid extract*, of marked value in the dypsnœa of asthma.

MT. SINAI HOSPITAL.

In some cases morphia hypodermically is found to be the only means of relief to the paroxysm. Other remedies are, however, employed at this hospital, such as iodide of ether, quinine, amyl nitrite; iodide of potassium given up to grs. clxxx. daily, has been of no service; potassium bromide in doses of grs. cxx. daily, has brought no relief. But when all such efforts are useless, as occasionally happens, *morphia* affords decided benefit; it has never failed. For relieving the cough of the concurrent bronchitis the following prescription is given with very great advantage:

℞. Tinct. belladonnæ . . . gtt. xv.
Sodii carb. . . . . grs. x.
Aquæ q. s.
M. Sig. Dose.

GERMAN HOSPITAL.

In the asthma of children, depending on emphysema and bronchitis, DR. JACOBI obtains great improvement by the administration of:

℞. Potass. iodid. . . . grs. iii-v.
Aquæ q.s.
M. Sig. Dose, three times daily, after meals.

Care is taken that the drug does not cause any gastric disturbance.

BRONCHITIS.

DEFINITION.—Inflammation of the membrane lining the bronchial tubes, distinguished by hoarseness, cough, dypsnœa, heat and dryness, followed by mucous or muco-purulent expectoration; these varying in intensity according to the severity of the inflammation, and the extent of involvement of the smaller tubes. The discharge is at first diminished in quantity, but soon becomes abnormally abundant and altered in quality.

BELLEVUE HOSPITAL.

ACUTE CATARRHAL BRONCHITIS.—In slight attacks, considered as an ordinary cold, DR. ALONZO CLARK advises that many cases may be left alone. When treatment is required at the onset of the attack he orders the patient to take a warm bath at night, and then without drying to wrap in blankets and sweat. Next morning friction is to be applied, especially over the chest, with a coarse towel. Where an expectorant is needed, he almost invariably prescribes:

℞. Syrup. senegæ . . . ℥ iii.
Tinct. opii camphor. . . ℥ ss.
M. Sig. A teaspoonful every three hours.

If this amount produces nausea, he dilutes it with one-third common syrup. In other instances he gives

℞. Tinct. benzoini co. . . . gtt. x.

Sig. Dose, on sugar every three or four hours.

When active fever is present, the so-called influenza, DR. CLARK administers diaphoretic treatment with tonics, the use of the atomizer, and the warm or foot bath. An easy perspiration is thus kept up, and if there is much weakness the patient is put to bed. A moderate amount of alcoholic stimulant is also given. By this means the fever usually passes off in four or five days, although the cough may last over.

In the first stages of acute bronchitis in children, Dr. J. LEWIS SMITH prescribes the following, with very marked benefit:

℞. Tinct. veratri viridis . . m. xii.
Syr. scillæ co. . . . ʒ ii.
Syr. balsam. tolut. . . . ʒ xiv.

M. Sig: A teaspoonful every two or three hours.

When the temperature falls and the moisture appears on the skin, under the above influence, its administration is stopped, and the following given:

℞. Ext. cubeb. fl. . . . m. xl-ʒ i.
Syr. simplic. . . . ℥ iiss.

M. Sig. A teaspoonful three or four times daily.

In the primary bronchitis of infants of one year, DR. SMITH finds the following combination very serviceable:

℞. Spts. æther. nitrosi . . . ʒ i.
Syr. ipecac. . . . . ʒ ii.
Ol. ricini . . . . . ʒ ii.
Syr. tolutan. . . . ʒ vii.
M. Sig. A teaspoonful every two to four hours.

At the invasion of mild attacks, with coryza, etc., Dr. Loomis gives a *Dover's powder* and warm bath at night, followed by a saline purge in the morning, or in children by a dose of castor oil; the patient remaining in the house for one or two days. The following formula for Dover's powder is much used at this hospital:

℞. Pulv. opii (12 per cent.)
Pulv. ipecac . . . āā pars i.
Sacchari lactis . . . partes viii.
M.

Should these measures fail, he then resorts to diuretics and diaphoretics. In severer forms of the disease he finds counter-irritation by means of cups or sinapisms very serviceable. In children the inhalation of the vapor of molasses and water is often very beneficial. Where extension to the smaller bronchi or a chronic form is impending, he administers *quinine, grs. viii-x. daily*, and when indicated, as in children, cod liver oil.

Capillary Bronchitis. — Dr. Clark's treatment is made somewhat energetic. A warm bath is administered, and the oil-silk jacket applied, inducing a copious and early diaphoresis. Too many bedclothes are found to be oppressive; this should be

borne in mind. Expectorants he considers of very little good. In addition to these measures, he places the patient on a milk diet and administers tonics, iron and quinine.

Dr. Loomis confines the patient to bed, the air of the room being moistened with steam; or the steam tent is used with excellent service. Dry cups are applied to the chest, followed by the oil-silk jacket. Internally he gives:

℞. Ammon. muriat.
Potass. chlorat. . . āā grs. v-x.
Sig. Dose, every two hours to adults.

Expectorants are of little value. To relieve the severe bronchial spasms, *hydrocyanic acid* is given with benefit. *Opium* he believes does harm by lessening the power of expectoration. For the exhaustion which is usually present, stimulants are administered. When signs of deficient aëration of the blood appear, oxygen is given by inhalation, and an emetic is administered with great relief, especially in children. Later on, when the heart's action becomes feeble and the respiratory movements less frequent, stimulants, brandy and quinine, are freely demanded. The diet is made nutritious throughout, consisting chiefly of milk and eggs.

In urgent cases the treatment at this hospital is somewhat as follows: Where there is a condition of severe dyspnœa, prostration, more or less cyanosis, respiration rapid and superficial, pulse weak, and the first sound of the heart faint, dry cups, from thirty

to fifty in number, are applied to the chest, and the following given:

℞. Tinct. digitalis . . . gtt. x.
Spts. frumenti . . . ℥ ss.
M. Sig. Dose, every two hours.

If the cyanosis increases, the respiration grows short and very rapid, pulse failing and the first heart-sound lost, with all evidences of impending suffocation, the patient is cupped repeatedly over the chest and kidneys, and *infus. digitalis, ℥ ss. every hour*, administered, together with *whiskey, ℥ ss. every half-hour*. Poultices are also applied over the chest and renewed every hour. If this fails to bring up the heart, *grs. v of ammonium carbonate*, are given every half-hour. By these efforts, repeated and kept up as demanded, success may follow; or in spite of all exertions the case may gradually become worse and worse.

Chronic Bronchitis. — Dr. Austin Flint places the patient on *tonics, cod liver oil*, etc., and the observance of good hygiene. For the dyspnœa, *quebracho* is employed with marked benefit, given in doses of m. xx–xxx. of the fluid extract.

Dr. Alonzo Clark gives the following with good effect in the slight attacks or exacerbations which frequently recur from exposure:

℞. Mist. guaiaci . . . ℥ i–℥ ss.
Tinct. balsam. tolut. . gtt. vi–x.
M. Sig. Dose, every three hours.

Dr. Loomis' treatment depends in a great

measure upon the associate condition; *e.g.*, heart disease, emphysema, rheumatism, etc. These are to receive special medication. For the paroxysms of cough, opium or hydrocyanic acid are found very serviceable. The following formula is used at this hospital:

℞. Potass. cyanidi
Morphiæ sulph. . āā grs. xvi.
Syrup. tolut. . . . ℥ xvi.
M. Dose: A teaspoonful.

If the spasms are very severe, the inhalation of a few drops of *ether* or *chloroform* often give relief. For an expectorant, *senega*, *camphor*, or *tincture of benzoin* combined with potassium or sodium carbonate are very useful. Counter irritation is also resorted to at times with much benefit. The inhalation of steam, or of the vapor of iodine, often relieves the abundant secretions. When the power of expectoration is greatly weakened, an emetic may be given with good result. In addition to these means of treatment, Dr. Loomis instructs the patient to avoid all exposure to changes of the weather, and if possible to remove to a warm, dry climate. Where emaciation is marked, a sea-voyage is advised with benefit. The diet should be nutritious, combined with moderate stimulation; with this he also prescribes tonics, *iron and quinine*, especially if an anæmic condition is present, and means to improve the digestion.

Dr. J. Lewis Smith employs the following with advantage in children, where there is also anæmia:

℞. Ferri et ammon. citrat.
Ammonii carbon. . āā grs. xxxii.
Syrupi
Aquæ anisi . . . . āā fl. ℥ ii.
M. Dose, a teaspoonful.

With heart disease present, he frequently prescribes:

℞. Tinct. digitalis . . . gtt. xvi.
Ammon. chloridi . . . grs. xvi.
Syrup. tolutan. . . . . ℥ i.
Aquæ . . . . . ℥ i.
M. Dose, a teaspoonful.

In those cases of prolonged bronchitis in children, especially if associated with heart trouble, DR. JACOBI first insists, as far as possible, on absolute rest. He directs that the child be kept in a mild, equable temperature, and subjected to the occasional use of steam inhalations. For medicinal treatment he makes use of the following with benefit:

℞. Morphiæ sulph. . . . . gr. i.
Ext. digitalis fl. , . . gtt. xvi.
Aquæ . . . . . ℥ ii.
M. Sig. A teaspoonful four times a day.

He also employs the *iodides* to promote absorption of the exudation. Of these he prefers the iron and the soda salts; but so long as fever of an inflammatory or catarrhal character is present, he would not use the iodide of iron. DR. JACOBI not infrequently finds an elongated uvula causing excitation or tickling of the pharynx. This sets up a constant irrita-

tion which is apt to give rise to a pharyngeal cough, extending downward to the bronchi. In these cases he advises the removal of such an elongated uvula at the earliest moment. It should not be done, however, when diphtheria is prevailing.

The following is DR. E. G. JANEWAY'S prescription, and is considered very serviceable, being extensively used at this hospital:

℞.	Potass. iodidi	ʒ iii.
	Tinct. tolutan.	ʒ i.
	Ext. pruni virg. fl. . . .	ʒ i.
	Syrupi	℥ i.
	Spts. æther. co. . . .	℥ ii.
	Aquæ	℥ i.
M.	Dose: A teaspoonful.	

PLASTIC BRONCHITIS.—DR. CLARK employs inhalations of steam, not too hot, thrown full in the face and breathed. For this purpose he prefers the *steam of lime water* as more efficacious than ordinary steam, in this form of bronchitis. The system is also to be supported by a good, nutritious diet and the administration of tonics, iron and cod liver oil.

DR. LOOMIS' treatment is in every respect similar to the above.

FETID BRONCHITIS.—In addition to his usual means of medication, etc., DR. CLARK employs some antiseptic to destroy the odor and to deodorize the room. Very often a sponge dipped in carbolic acid is quite serviceable for this purpose.

NEW YORK HOSPITAL.

ACUTE CATARRHAL BRONCHITIS.—In the severer forms of this disease where the smaller bronchi are involved, and there is great dyspnœa with evidence of collapsed lung, alcoholic stimulants are given immediately, with carbonate of ammonium, and opium to stimulate the heart and lessen the dyspnœa. In regard to the use of *opium* in these cases, DR. W. H. DRAPER considers it a most efficient remedy. He advises a cautious administration, however, in sufficient quantity to derive benefit from its action, namely: as a cardiac stimulant arousing the weakened circulation, relaxing the spasmodic contraction of the bronchial tubes and allowing the free ingress of air, and controlling the dyspnœa. The following case will exemplify:

Four weeks previous to admission the patient, a female æt. 40, began to suffer from cough with profuse expectoration. Two weeks later there was urgent dyspnœa. When admitted, her chart showed respiration 50, temperature 100.6, and pulse 96. Percussion gave fair, but modified, resonance both in front and posteriorly. Auscultation in some places was negative; in others loud, coarse râles, sonorous and moist, were heard. Expectoration muco-purulent. Prostration was extreme and the patient was apparently dying from dyspnœa. Her breathing was exceedingly labored, countenance anxious, skin dusky, and the pulse very feeble. Stimulants were at once administered freely. Ammonium carbonate

was given but not retained. Alcohol and opium were then ordered. *Liq. morph. sulph.* (*Magendie*), *m. v.* were given hypodermically, and shortly afterward m. x. more of the same solution were injected. Under the influence of this treatment she began steadily to improve, and on the following day was quite comfortable, although seemingly moribund on admission. Within forty-eight hours her breathing was much less labored, respiration down to 30, pulse fair, and general condition good.

The following, from this hospital, is often very serviceable in the acute as well as in the more chronic form of bronchitis:

℞. Potass. iodid. . . . . ʒ iii.
Spts. æther. co. . . . ℥ i.
Syr. pruni virg. . . . ℥ iii.
M. Sig. A teaspoonful.

Capillary Bronchitis.—Prompt and energetic measures are immediately adopted. Dry cups are applied to the chest, and brandy and ammonium carbonate given. The following combination is frequently used at this hospital:

℞. Ammon. muriat.
Potass. chlorat. . . . āā ʒ i.
Ext. glycyrrh. . . . ʒ ss.
Aquæ cinnam. . . . ℥ iv.
M. Dose: A teaspoonful.

To allay the bronchial spasms hydrocyanic acid is often very beneficial. The following is the formula employed at this hospital:

℞. Potassi cyanidi . . . grs. ii.
Syrup. tolutan. . . .
Liq. morph. sulph. (U. S. P.) . āā ʒ i.
M. Dose. A teaspoonful.

The above is also used with advantage in chronic bronchitis.

ST. LUKE'S HOSPITAL.

ACUTE CATARRHAL BRONCHITIS.—In simple bronchitis, DR. J. R. LEAMING prescribes:

℞. Ammon. chlorid. . . . ʒ ii.
Potass. chlorat. . . . ʒ i.
Aquæ cinnam. . . . ℥ iii.
Syrup. senegæ . . . ℥ ss.
Spts. æther nitros. . . . ℥ ss.
Ext. glycyrrh. . . . ʒ iss.
M. Dose. A tablespoonful every two hours.

This he finds of excellent service, adding tartar emetic, belladonna, aconite, or tincture of iron when desired, according to indications.

CHRONIC BRONCHITIS.—DR. A. H. SMITH has repeatedly made use of *quebracho* to relieve the paroxysms of dyspnœa, and found it very effective in almost every instance; either with or without emphysema present. He uses the *fluid extract in doses of m. xxx–xl., three times daily.*

DR. BEVERLY ROBINSON places much reliance on the following prescription, which is a favorite with him:

℞. Ammonii carbon. . . grs. x.
Syr. ipecac. . . . . ʒ iss.

Tinct. opii camph. . . ℥i.
Syr. pruni virg. . . . ℥ss.
Aquæ q. s. ad . . . ℥ii.
M. Dose. A teaspoonful to a tablespoonful.

MT. SINAI HOSPITAL.

CHRONIC BRONCHITIS.—In children, when there is present a condition of peribronchitis with catarrh, and more or less fever, Dr. JACOBI confines the patient to bed for three or four days, and administers *quinine, grs. viii. daily*, taken during the forenoon. If the cough is severe, he gives *pulv. Doveri. grs. v. at night.*

With this he combines warm drinks to induce diaphoresis. After the fever has subsided, to reduce the amount of exudation, and to assist in the absorption of that already present, he prescribes:

℞. Potass. iodidi . . grs. iii–v.
Aquæ. q. s.
Sig. Dose, three times daily, some time after meals.

Care is taken that the drug does not disarrange the stomach. The nutrition is to be sustained by good diet, etc.

For the attacks of bronchitis occurring in cases of asthma, the following is used with service in relieving the cough:

℞. Tinct. belladonnæ . . gtt. xv.
Sodii carb. . . . grs. x.
Aquæ q. s.
M. Sig. Dose.

CHARITY HOSPITAL.

CAPILLARY BRONCHITIS.—For the high temperature, DR. BEVERLY ROBINSON gives quinine in large doses. In cases occurring secondary to cardiac disease, when the temperature is only moderate in degree, and the heart becomes weak and irregular, the respiration panting and laborious, and the general symptoms alarming, he stops the quinine, and gives large doses of digitalis with marked benefit. If seen from the commencement, he begins with *tinct. of digitalis, gtt. v–xv. three or four times daily;* or ʒ i–iii. of the infusion. If any great degree of prostration becomes manifest, he combines the digitalis with small doses of strychnia. If, however, the patient is not seen until the later stages, when pulmonary obstruction is intense, DR. ROBINSON does not hesitate to administer ʒ *i doses of tinct. digitalis every four hours*, until the anxiety, præcordial oppression, and the very pronounced dyspnœa have partially subsided. The following hydrocyanic acid mixture is very much used at this hospital:

℞.	Potass. cyanidi . . .	grs. ii.
	Vini antimonii . . .	ʒ ii.
	Syr. tolutan. . . .	
	Mucil. acaciæ . . .	āā ℥ ss.
	Aquæ q. s. ad . . .	℥ ii.

M. Dose. A teaspoonful.

This will also be found of marked service in chronic bronchitis.

EMPHYSEMA.

DEFINITION.—(*a*) *Vesicular.*—Increase of air in the air-cells of the lungs, producing excessive dilatation, followed by obliteration of their blood vessels, degeneration and ultimate rupture or their walls, establishing a communication with one another, and the final union of many into one or more large and irregularly shaped vesicles or sacs. (*b*) *Interlobular.*—Extravasation of air into the interlobular areolar texture of the lung, consequent upon laceration of its substance from concussion or other violence.

BELLEVUE HOSPITAL.

For the bronchitis, which is usually the objective point in the treatment, besides certain palliative measures, DR. AUSTIN FLINT uses the iodide of potassium, ammonium or potassium chloride, and the balsamic remedies. By this means he accomplishes a great deal of good in these cases. The following is often prescribed at this hospital:

℞. Potass. iodidi . . . . ʒ iii.
Ammon. carbon. . . . . grs. l.
Syrup. pruni virg.
Spts. æther. co. . . . āā ʒ iss.
M. Dose. A teaspoonful.

For the dyspnœa, he has found the *fluid extract of quebracho* often of great service. In many cases with bronchitis and asthma, where this symptom is constant and increasing, m.xxx, every three hours, has afforded greatest benefit, the dyspnœa disappearing and the appetite and strength improving in a marked degree. DR. FLINT also places the patient upon *tonics*, *cod liver oil*, etc., combined with good hygienic measures. Thus a further increase of the emphysema may be prevented, but it can hardly be expected to cure the bronchitis. A change of occupation is also advised.

When spasmodic asthma is a prominent recurrent symptom, in addition to a general tonic plan of treatment the following is employed with marked benefit:

℞. Potass. iodidi . . . . . ʒ ii.
Spts. æther. co. . . . . ℥ ss.
Syr. pruni virg. . . . . ℥ iv.
M. Sig. A teaspoonful four times daily.

For emphysema due to the rupture of an asthma from concussion or pressure, DR. ALONZO CLARK advises that very little can be done. If left to itself the rupture will heal and the air be taken up by absorption. In ordinary emphysema his treatment is directed to the asthma or bronchitis attending it. If the daily occupation of the patient calls for forced action of the lungs, *e. g.*, wind musicians, this should be given up. When the accompanying bronchitis has gained a chronic condition, he advises removal to another climate; whether colder or warmer depends entirely upon the patient, in which he expe-

riences the most benefit, but in either case he would insist upon the climate being a dry one. If circumstances do not permit of this change, DR. CLARK then administers a general tonic plan of treatment combined with the observance of good hygiene. He also gives *strychniæ sulph., gr.* $\frac{1}{40}$, *four times daily*, in conjunction with *cod liver oil.* When heart disease is also present, and the attacks are marked with severe dyspnœa, pain, cough, and cardiac disturbance, these symptoms becoming aggravated at night with possibly night sweats, DR. CLARK makes use of the following with good effect in these cases:

℞. Potassii iodid. . . . . grs. x.
Tinct. digitalis . . . . gtt. x.
M. Sig. Dose, three times daily.

DR. LOOMIS aims chiefly to build up the defective nutrition. The diet is made rich and nutritious, chiefly animal, and everything producing flatulence carefully avoided. Moderate out-door exercise may be taken, but exposure to cold or anything exciting dyspnœa must be guarded against. A change of residence is also advised to that locality which proves most agreeable to the patient. For internal administration he gives *iron* daily for a considerable period, combined with opium in small doses. When dyspeptic symptoms are prominent he makes use of the *mineral acids* and *vegetable tonics*, together with cod liver oil if there is much emaciation. For the bronchitis, which is often very distressing, DR. LOOMIS gives:

℞. Potass. iodidi . . . . grs. x-xx.
Sig. Dose, three times a day.

This he continues for some time and often with marked benefit.

PRESBYTERIAN HOSPITAL.

For the dyspnœa, *ext. quebracho fl., in doses of m. xx-xl.*, is often used with much relief.

NEW YORK HOSPITAL.

DR. W. H. DRAPER directs attention to the fact that emphysema is often developed in patients with acquired, or hereditary, gout or chronic rheumatism; and that with the asthma present the gout is almost sure to show itself. He therefore considers the recognition of this state, which is so frequently overlooked, an important feature in the treatment, since it calls for dietetic and hygienic regulations which improve the condition of the patient. He recommends a change of climate, where the patient can be out of doors much of the time and enjoy plenty of fresh air. This is also demanded by the gouty diathesis. He also prescribes a simple diet, not to any great extent carbonaceous, and without the fermented liquors; advising the use of animal and vegetable foods to the exclusion of wine, beer and cider. For medicinal treatment in these cases, DR. DRAPER objects to the expectorants, lobelia, ipecac, opium; or the syrups which act specifically on the mucous membrane. He makes use of the rheumatic treatment, giving the citrate of potassium or sodium, or any of the common alkalies, to be taken on an empty

stomach. The following, from this hospital, is a very agreeable form of administration:

℞. Potassii. citrat. . . . ℥ iss.
Syrup. limonis
Aquæ. . . . . āā ℥ iii.
M.

When the nervous element of the disease is prominent, he gives *potassium iodide* and tonics, such as *iron, cod liver oil,* etc. If the patient has been enjoying a life of luxury with abundance of wines and high living, this must all be put aside and a radical change brought about in the state of things which has caused the disease.

ROOSEVELT HOSPITAL.

For the bronchitis which, as a rule, requires most of the treatment, DR. FRANCIS DELAFIELD uses a mixture of iodide of potassium, wine of ipecac, and Hoffman's amodyne, combined with the administration of iron and quinine; also cod liver oil, when indicated, of which the following preparation is used at this hospital:

℞. Olei morrhuæ . . . . ℥ ii.
Spts. lavandulæ co.
Vini gallici . . . . āā ℥ i.
M. Sig. Dose.

When, however, all these measures fail, he often finds that *sulphuric acid* affords great relief. This he administers in rather larger doses than ordinary, giving:

℞. Acid. sulphur. aromat. . gtt. xv–xx.
Sig. Dose, three or four times daily.

and stopping all other remedies except the oil, which is continued with advantage. In order to ascertain whether the acid is to be of service in any case, he directs that it be tried for at least three weeks. Where the bronchitis is very slight or absent, as occasionally happens, and the patient suffers from dyspnœa and cough, DR. DELAFIELD simply attends to the general health, and avoiding those remedies usually employed in other instances he makes use of cod liver oil, iron and quinine, continued steadily for some time. He also employs *iron* and *arsenic* with benefit in these cases. The following pill is an excellent combination, and very much used at this hospital:

℞. Acid. arsenios. . . . gr. $\frac{1}{24}$.
Ferri redacti . . . gr. i–ii.
Quiniæ sulph. . . . gr. i–ii.
M. ft. pil. No i.
Sig. To be taken three times daily.

PULMONARY HÆMORRHAGE—CONGESTION—APOPLEXY.

DEFINITION.—A discharge of blood from the lungs by expectoration (hæmoptysis); resulting from hyperæmia of the capillary vessels (congestion), or from direct extravasation into the air-cells and terminal bronchi; in the latter instance the blood tends also to accumulate in the tissues (apoplexy).

NEW YORK HOSPITAL.

DR. W. H. DRAPER calls attention to the importance of not pushing the treatment too far at the onset, particularly in cases of free hæmorrhage. Where there is active congestion with severe dyspnœa, dry cupping is very beneficial; or sometimes when associated with œdema, diuretics and cathartics are used with advantage. In cases of pulmonary apoplexy, stimulants are administered, absolute rest enforced, and the recumbent position in bed maintained. In severe hæmoptysis, especially if causing cerebral anæmia, the patient is immediately put to bed, kept perfectly quiet and not allowed to talk. To relieve the bleeding, *ext. ergot. fl.*, *m.x-xx.* are given at once, and repeated as indicated. *Liquor morph. sulph.* (*Magendie*), *m.x.*, are also administered hypodermically. This stimulates the heart and

composes the mind, relieving the apprehension which always accompanies loss of blood from the lungs. *Gallic acid* is also given. DR. DRAPER, however, believes that the controlling effect of ergot and the astringents is more marked in ordinary hæmorrhage due to congestion. If the source of the hæmorrhage is ascertained, he applies *poultices of ice* to the chest. Complete rest should always be insisted on, and examinations to ascertain the source of the blood should be exercised with the utmost care, and never made until the immediate effects are recovered from. The following solution of ergot is used for hypodermic administration:

℞. Ext. ergot. (Squibb's) . . pars i.
Aquæ destil. carbol. . . part. v.
M.

BELLEVUE HOSPITAL.

DR. ALONZO CLARK believes the fluid extract of ergot to be as efficacious as anything for internal use. But he places still greater reliance on *tying off some of the vessels* and holding the blood in the veins for a few minutes, thus relieving the lungs. A bandage placed about the arm will suffice, the blood being thus permitted to accumulate in the veins. He advises caution, however, about allowing the blood to remain tied off for any great length of time in one part. He prefers to liberate the vessels in one arm after the ligature has been applied for a period of five minutes, and, if necessary, tie up the other arm or leg. DR. CLARK has never found this method to

fail in a single instance. Where the hæmorrhage is moderate he finds that *dry cupping* will serve this purpose, a dozen being applied. For internal administration the following is often used at this hospital:

℞. Ext. ergot. fl. . . . ℥ iv.
Ext. ipecac. fl.
Tinct. opii deodor. . . āā ℥ iv.
M. Sig. A teaspoonful thrice daily.
Or:
℞. Ext. ergot. fl. . . . . ℥ ii.
Ext. ipecac. fl.
Tinct. opii deodor. . . . āā ℥ iv.
Syrup. simp. . . . . ℥ ii.
M. Sig. A teaspoonful three times daily.

Dr. Loomis advises rest in bed with absolute quiet, avoiding even the slightest movements. He has very little faith in styptics or astringents, especially in free hæmorrhage. If cough exists aggravating the bleeding, *opium* is given in full doses. In extreme cases *ice-bags* are applied to the chest, but this measure must be resorted to with care. Where congestion is present dry cupping is employed with much benefit; or, when in his judgment indicated, blood is abstracted. Ice is also given in small pieces, with an abundant supply of cool drinks. If a recurrence of the hæmorrhage is apprehended, everything provoking such a tendency is guarded against, and the strength of the patient supported by tonics, iron, and a nutritious diet. Where the congestion is dependent on feeble cardiac action, stimulants are used; if the opposite condition exists,

℞. Tinct. aconiti rad. (Fleming's) gtt. ii-iii.

Sig. Dose, every three or four hours.

may be given. In cases of pulmonary apoplexy with heart disease, stimulants are given together with digitalis. *Counter-irritation* by means of sinapisms and dry cups is found very serviceable. When associated with blood-poisoning, sustaining measures are also employed and stimulants, iron and quinine freely administered.

CHARITY HOSPITAL.

In moderate hæmorrhage, DR. BEVERLY ROBINSON applies *fly-blisters* to relieve the local congestion. He also employs ergot with excellent results. If the bleeding is slight, small doses are usually sufficient; but in abundant hæmorrhage, *fluid extract of ergot in doses of* ʒ *i.* is administered frequently, and the patient given small pieces of cracked ice to suck and swallow. This plan he finds very successful. He also advises abstinence from all stimulants, with the observance of regular habits, restraint from over muscular exertion, plenty of open air and good, nutritious food.

For hypodermic administration the following is used at this hospital:

℞.	Ergotini	grs. xxxvi.
	Glycerinæ	
	Aquæ	āā m. cviii.

M.

DR. J. W. HOWE has practiced *transfusion*, both of milk and of blood, in some cases with great benefit.

PULMONARY ŒDEMA.

DEFINITION.—Infiltration of serum into the areolar tissue of the lungs, marked by increasing dyspnœa, cyanosis, and more or less cough with watery expectoration.

BELLEVUE HOSPITAL.

DR. LOOMIS advises that *dry cups* be applied repeatedly over the chest, and diureties given combined, at times, with hydragogues and diaphoretics. In strong and robust patients *bleeding* is resorted to very efficiently. Where there is much exhaustion with feeble heart action, stimulants are administered together with digitalis.

As a rule, at this hospital, dry cups to the number of 50 to 150 are applied and digitalis ordered, as follows:

℞. Tinct. digitalis. . . . gtt. xx.

Sig. Dose, every two or three hours.

together with *ammonium carbonate grs. v-x.*, at corresponding intervals. Whiskey is also given in doses of ʒ ss., hypodermically or by the mouth. These are repeated as necessary.

Sometimes the hot-pack is used. Or in other cases with full and sthenic pulse, blood is drawn to ʒ x-xii.

with marked effect. In strong and robust patients with good pulse, *jaborandi, in doses of* ʒ *i,* is often used with decided benefit; or:

℞. Ext. jaborandi fl. . . m. x-xv.
Aquæ . . . . . q. s.
M. Sig. Dose, every one or two hours.

Sometimes pilocarpine is preferred, in doses of gr. i-iss. It is found, however, that pilocarpine produces greater depression of the heart than jaborandi.

Dr. Austin Flint finds dry cupping very beneficial in ordinary cases. But in sudden attacks of pulmonary œdema existing in a degree sufficient to cause much obstruction to the respiration, showing a condition of great dyspnœa and cyanosis with tense and full pulse, other means of depletion being too slow in action, Dr. Flint resorts to immediate *venesection,* bleeding to ʒ x-xii. This is usually followed by almost instant alleviation of the symptoms, and life not unfrequently saved by this prompt measure. The dyspnœa which remains he treats by *inhalation of oxygen.*

NEW YORK HOSPITAL.

Dr. W. H. Draper applies dry cups with great advantage; the extremities are kept warm and stimulants ordered as follows:

℞. Spts. vini gall. . . . . ℥ i.
Tinct. digitalis . . . . gtt. x.
Sig. Dose, every two hours.

Ammonium carbonate is also given. Sometimes

turpentine stupes are employed; or, in other instances, diuretics, diaphoretics and cathartics are used very serviceably. Inhalation of oxygen often affords the patient much relief to the breathing. In certain cases he resorts to the careful administration of morphia with excellent effect, giving *liquor morphiæ sulph.* (*Magendie*), *gtt. iv-vi.*, and repeating the dose every two or three hours, if necessary. Or morphia combined with digitalis is used. But he advises that the dose of morphia as a heart tonic must be small.

PRESBYTERIAN HOSPITAL.

Dr. A. H. Smith orders cups applied to the chest and stimulants given to support the heart's action. Oxygen gas is also used at times. For the dyspnœa, however, he has found the following to be, in many cases, the only means of affording relief:

℞. Ext. quebracho fl. . . m. xx-xl.
Sig. Dose.

The effect is almost instantaneous and frequently continues for some time. The remedy occasionally fails, however, and is therefore not specific in all cases; but, as a rule, he considers quebracho of great value.

PULMONARY GANGRENE.

DEFINITION.—Pulmonary gangrene is characterized by the breaking down of the lung-tissue, and its conversion into a fetid, dirty, greenish mass or matter, with a similar discolorization of the surrounding consolidated tissues.

BELLEVUE HOSPITAL.

DR. LOOMIS' treatment is purely sustaining by means of stimulants, tonics, and nourishing food. *Opium* is given in sufficient doses to relieve the general symptoms of distress, as well as the pain and cough. In regard to antiseptic inhalations, he is rather doubtful of the good results claimed by some. The internal administration of *potassium chlorate* he considers of no radical service whatever.

DR. ALONZO CLARK believes that treatment is of little avail, although cases have recovered. He resorts to a prompt and vigorous defence against the effects of the disease by supporting the strength of the patient with good, nutritious food, tonics and medicines which are sustaining. For this purpose, while *iron* offers the most permanent benefit, yet he considers quinine the more prompt, believing it to be one of the best remedies in this disease, and orders its free exhibition, giving *quiniæ sulph., grs. x. three times*

daily. He uses the alcohols carefully, giving them only by the pulse indications. When convalescing, he requires the patient to keep perfectly quiet in bed and to avoid all muscular movements; this to prevent fatal hæmorrhage from weakened or even open vessels.

It may not be out of place to mention a plan of treatment for gangrene of the lung adopted by M. Raynaud of Charité Hospital, Paris. He speaks very strongly concerning the good effects of *eucalyptus* in this affection, and mentions two cases cured by this remedy. His mode of administration is as follows:

℞. Tinct. eucalypt. . . . ʒ iss-ii.
Sig. Dose, daily.

With this he combines Trousseau's treatment, which consists in the *inhalation of terebinthinæ;* inspiration being effected by means of a tube inserted in a bottle of the essence.

PART II.

DISEASES OF THE HEART.

VALVULAR LESIONS.

DEFINITION. — An abnormal condition of the valves of the heart, causing obstruction to, or regurgitation of, the current of blood in its passage through the cavities of the organ.

BELLEVUE HOSPITAL.

As a general rule, DR. AUSTIN FLINT considers that patients with valvular lesions do not suffer much inconvenience, so long as hypertrophy predominates. He directs that all kinds of mental emotion and physical exertion which increase the action of the heart, be carefully avoided. Otherwise considerable muscular exercise may be indulged in with advantage, but it is to be carried only to the extent of not suffering the least discomfort. In aortic regurgitation, however, active physical or mental excitement is to be especially guarded against. During the earlier stages of heart disease, when the patient is apparently well, except for a feeling of oppression and discomfort over the cardiac region, very little is done in the way of treatment. The

various functions of the body are carefully regulated, and the system sustained by good, nutritious food. All wines, spirits, and tobacco are forbidden, the diet is made simple and nourishing, chiefly nitrogenous in character, and everything tending to set up gastric disturbance, flatulence, etc., rigidly avoided. By the strict and regular enforcement of these measures, combined with rest, very great benefit usually obtains.

When dilatation succeeds there is dyspnœa, at first upon exertion, then when at rest, together with cyanosis and more or less general dropsy. In such cases, Dr. Flint considers complete rest in bed and the absence of all exciting causes of primary importance. For the dyspnœa, he resorts to the careful use of opiates, or at times the ethereal preparations are employed with relief. The following is often given with good effect:

℞. Sol. morphiæ (U.S.P.)
Spts. æther co. . . . . āā ʒ i.
M. Dose, a teaspoonful.

For the heart itself, especially when it is feeble and irregular in action, he administers *tincture of digitalis in doses of m. x-xv.* This is given at short intervals in order to maintain a continuous effect of the drug.

In aortic lesions, Dr. Flint uses digitalis with a certain amount of reserve, believing that in some cases benefit follows the judicious administration of this remedy. He gives it in doses sufficient to secure the tonic effect on the heart without producing much slowness of the cardiac action, or incurring the

danger which some consider involved in its use; namely, over-filling of the ventricle and consequent paralysis. He also advises discretion in the employment of digitalis in all cases of heart disease; with a powerfully acting heart the drug does harm. His indications for its use are weakness, rapidity, and irregularity. In aortic regurgitation, with also obstruction, where the hypertrophy is insufficient to overcome the dilatation, nutrition of the cardiac muscle may be increased by the hypodermic injection of *digitaline, gr.* $\frac{1}{100}$ *three times daily.* This, combined with small doses of iron simply to stimulate the heart, is followed by marked improvement.

In mitral lesions, and when the tricuspid valves become insufficient, the most beneficial effects of digitalis are observed. When there is a condition of dyspnœa, præcordial pain and palpitation, with œdema of the feet and ankles, digitalis in moderate dosage combined with quiet rest in bed is found to be of great service. To relieve the dyspnœa DR. FLINT also uses the following with very satisfactory results, even in cases of the severest intensity:

℞. Ext. quebracho fl. . . m. xx-xxx.

Sig. Dose.

If dizziness, dimness of vision, and vertigo are also present, with marked pallor and venous pulse, he resorts to the careful administration of stimulants, *alcohol* and *carbonate of ammonium.*

To remove the dropsy, he finds that hydragogue cathartics and diuretics, employed judiciously, are very serviceable. When general anasarca is present

without dyspnœa and cyanosis, DR. FLINT often causes it to disappear by the administration of the *infusion of digitalis, in doses of ℥ ss. every three hours.* In some cases salines are also given, together with alcohol if indicated. Where in addition to the dropsy there is hydrothorax and pulmonary œdema, with attacks of orthopnœa, he orders *dry cupping* applied to the chest and the internal use of the following:

℞. Potass. acetat. . . . . ℥ ss.
Infus. digitalis . . . . ℥ ss.
M. Sig. Dose, every three hours.

In such emergencies he also, as a rule, gives *olei tiglii, gtt. ii.*

Besides the relief of the special symptoms, DR. FLINT directs his treatment to the improvement of the blood by improving the general condition of the patient. If anæmia is present he not only employs the chalybeates, but also administers those remedies which assist the digestion and assimilation. By the adoption of these measures, varying in individual cases, together with the benefit of hospital repose and proper management, life is often prolonged several years.

The following is very extensively used at Bellevue Hospital:

℞. Sodii bicarb. . . . . ℥ i.
Pulv. rhei . . . . . ℥ ss.
Spts. menth. pip. . . . . ℥ ii.
Aquæ q. s. ad. . . . . ℥ iv.
M. Dose, a tablespoonful.

Dr. Alonzo Clark advises moderation in all the habits of life. He directs the patient to exercise less energy than formerly, and to avoid all active exertions which accelerate the heart's movement, such as fast walking, going up stairs quickly, etc. For this reason he finds that plethoric persons bear heart disease better than the sanguineous who are more active. As the heart reacts promptly to any disorder of digestion, the stomach must be well regulated, and everthing tending to excite dyspepsia and flatulence carefully abstained from. The patient is instructed to eat slowly and never to a full stomach; this almost invariably aggravates the præcordial pain. Alcoholic liquors must be strictly avoided. By the observance of these measures Dr. Clark believes that disorders of the valves may be carried for life, needing no immediate treatment beyond occasional advice.

Where palpitation is a constant and persistent symptom, he gives *nux vomica* in small doses, or *ext. veratrum viride fl., gtt. i. three times daily.* This causes the heart to act more regularly and also relieves the œdema when present. *Bleeding* he would never resort to. If *opium* is employed at all it is with extreme care, especially in the advanced stage of cardiac disease, as coma may easily supervene. In such cases, Dr. Clark makes use of the following with very great benefit:

℞. Chloral. hydratis . . . grs. v.
Potass. bromid. . . . . grs. x.
Aquæ q. s.
M. Sig. Dose.

This he gradually increases until double the amount is taken. For the stomach affection, he prescribes nitro-muriatic acid with pepsin. The following combination is employed at this hospital:

℞. Pepsini . . . . . grs. lxiv.
Aquæ . . . . . ʒiiss.
Acid. hydrochlorici . . . ʒss.
Glycerinæ . . . . . ʒiss.
M. et filt.

For marked intermission of the heart occurring in organic disease, if any medication is possible he gives preference to the alcohol treatment.

In the early stage of mitral disease when the appetite is good, with no flatulence or disturbance of digestion, he is not inclined to administer digitalis; in these cases his treatment is mainly advice. When associated with renal disease, if the heart is regular in its action, and with no special indication for treatment, he endeavors to relieve the kidney lesion by placing the patient on the use of *iron*, combined with the administration of diuretics. The following is very often used by him for this purpose:

℞. Potass. acetat.
Infus. digitalis . . . āā ʒii-iv.
M. Sig. This amount daily.

By this means the cardiac symptoms and the attending distress are usually promptly relieved.

It is mainly when dilatation succeeds and venous obstruction occurs, causing systemic congestions followed by œdema of the lungs with dropsical and

pleuritic effusions, that energetic measures are adopted. Under these circumstances, DR. CLARK finds the *vapor bath* very efficacious (if the patient can bear it), followed by a profuse sweating induced by wrapping in blankets, and assisted in the morning by friction applied with a dry flannel over the entire body. This he repeats two or three times a week. Digitalis infusion is also given. He also acts on the kidneys by means of the salines, using the above prescription; or a *solution of potassium bitartrate, O i. to be taken daily.* Or he frequently employs the mineral waters for this purpose, especially Kissengen, giving a glassful three times a day. The following diuretic pill is a favorite with DR. CLARK, and often used with gratifying effect:

℞. Pulv. digitalis
Pulv. scillæ
Hydrarg. chlor. mit. . . āā gr. i.
M. ft. pil. No. i.
Sig. To be taken three times daily.

Where the patient is strong and able to bear the sweating, he administers:

℞. Tinct. jaborandi . . gtt. xv–xx.
Aquæ q. s.
M. Sig. Dose, at night.

with excellent effect. Regarding cathartics, he considers them objectionable; if used at all, only those which have the least depressing effect should be employed. In one instance the following was prescribed by him, with decided benefit, for a period of one year:

℞. Potass. et sodii tart. . . . ℥i.
Ext. sennæ fl. . . . . ℥i.
Aquæ q. s.
M. Sig. Dose, every other day.

For the heart, *digitalis* is given in doses sufficient to regulate the cardiac action. DR. CLARK also endeavors to enrich the blood by good, nutritious food, combined with the administration of chalybeates. By these means, together with perfect quiet and rest in bed, marked improvement in the general system follows, often very rapidly, and with great relief from the cardiac symptoms.

DR. FORDYCE BARKER makes use of the following with excellent effect, where there is flatulence and oppression after eating. He considers it one of the most agreeable and, at the same time, most successful of his prescriptions.

℞. Pepsini . . . . . ℥ii.
Acid. hydrochlor. dil. . . ℥i.
Aquæ menth. . . . . ℥iii.
M. filt. et add.
Syrup. aurantii cort. . . . ℥i.
Sig. A tablespoonful in water immediately after eating.

When anæmia is marked, and with much nervous irritability and depression present, the following combination is found by DR. BARKER to afford remarkable benefit :

℞. Acid. phosphoric. dil. . . ℥ss.

Tinct. ferri chlor. . . . ℥ i.
Strych. sulph. . . . . gr. i.
M. et add.
Glycerinæ . . . . . ℥ iss.
Syrup. aurantii cort. . . . ℥ i.
Sig. A tablespoonful in a wineglass of water directly after eating, taken through a tube.

In the treatment of cardiac disease, DR. LOOMIS considers rest in bed and the avoidance of all exciting influences, both physical and mental, to be of primary importance. The diet is made nutritious, principally nitrogenous, and given frequently in small amounts; everything promoting flatulent dyspepsia being carefully guarded against. In many instances his treatment is for the most part purely hygienic. With this he gives *iron* daily, especially if anæmia is present. When there is failure of the heart power, evidenced by œdema of the feet, etc., *digitalis* is employed by DR. LOOMIS both in aortic and mitral lesions, with marked service. The infusion is preferred and given in doses sufficient to furnish compensation. In mitral disease this not only relieves the pulmonary but also the systemic obstruction. When dropsy is present, he finds digitalis exceedingly valuable as a diuretic. For this purpose he frequently resorts to large doses, sometimes requiring of the *infusion of digitalis*, ℥ *ss. every three hours*, to control and regulate the circulation. Cathartics are also employed, at times, to relieve the surcharged veins. Excellent use is also made of the iron preparations in these cases, but more particu-

larly in anæmic patients, the following method of administration being preferred by him :

℞. Pil. ferri carbon. . . grs. x–xx.

Sig. Dose, three times daily, with the food.

When there is a condition of general anasarca, he resorts to *puncture* as the only means of relief.

As a subsequent treatment DR. LOOMIS advises that the patient lead a quiet life, free from all undue physical or emotional excitement, and that intemperance, both in eating and drinking, be carefully avoided. He considers it of the highest importance that failure of the heart power be prevented by rigidly abstaining from everything which calls the heart into active exercise. Where there is a rheumatic history, the patient is advised to resort to a climate offering the least liability of a recurrence of the rheumatic attack.

DR. W. H. THOMSON considers the hygienic management of these patients to be of vital importance. In many instances where there has been a condition of præcordial pain with palpitation, great dyspnœa on exertion, more or less cough, and possibly night-sweats, he has observed remarkable improvement to follow upon the change of life and the care and attention afforded by hospital discipline. When indicated he administers digitalis in form of the infusion, three times daily, and in sufficient amount to relieve the disturbance to the circulation. In the later stages, when dropsy is present with pleuritic effusion and intense dyspnœa, he orders *digitalis* and *potassium acetate* as a diuretic, together with *fluid extract*

of jaborandi, ʒ ss., *at night*. At times the *hot-air bath* is made use of; or as a final resort the body of the patient is thoroughly oiled, and then wrapped in blankets saturated with hot water. This is supported by the hypodermic injection of *pilocarpine*, *gr.* $\frac{1}{10}$. If the bowels are constipated, *gtt. ii. of croton oil* are given in pill form. Should this have no effect he resorts to the following, repeated if necessary:

℞. Hydrarg. chlor. mit. . . grs. xv.
Ext. jalapæ . . . . grs. x.
Sig. Dose.

If the bowels still refuse to move, in addition to this he administers, by injection, *elaterin*, *gr.* $\frac{1}{20}$-$\frac{1}{10}$ *every hour* for three or four hours. By either or all of these means, DR. THOMSON usually succeeds in obtaining free diaphoresis. Should this not prove sufficiently abundant, however, he assists by the injection of *pilocarpine*, *gr.* $\frac{1}{10}$, continued every hour until gr. ss. has been given. When dropsy alone is present without the more urgent symptoms, jaborandi is very often employed in doses of ʒ ss-i., with excellent effect; relief is usually prompt and lasting for many hours.

In children, where shortness of breath on exertion is the only symptom complained of, no special indication for treatment is called for. The mode of living, the diet, and the various functions of the body are regulated; the nutrition, if the appetite is poor, sustained; and, especially if anæmia is present, iron and quinine are given, together with cod liver oil if there is a loss of flesh. In such cases, it is advised

that rest out of school for a season is often of great benefit.

In the treatment of heart disease in children, associated with chorea, DR. THOMSON considers *zinc* and *arsenic* most serviceable; of these he prefers zinc, commencing with *zinci sulphat., gr. i.*, and increasing the amount until nausea is produced. By this means he has frequently seen marked improvement within a week. For the abnormal condition of the nervous system, with faulty nutrition, anæmia, etc., he finds the following prescription of great value:

℞. Quiniæ sulph. . . grs. xx.
Ferri lactatis . . grs. xx.
Pulv. carb. lig. . . grs. xl.
M. ft. pulv. No. xx.
Sig. One, three times daily in cod liver oil.

He also advises that the general treatment be continued for several months, even though marked improvement takes place.

In choreic cases, Dr. E. G. JANEWAY places most reliance on strychnia, given in small doses, and continued for a considerable period or time. If anæmia is also present he administers iron.

NEW YORK HOSPITAL.

In the treatment of organic disease of the heart, DR. WM. H. DRAPER considers *rest* the cardinal principle. This must be absolute and in bed, to secure which the most stringent rules are enforced.

Excitement of all kinds must be abstained from, and everything tending to irritate the action of the heart carefully avoided. The dietetic regimen he makes equally important, and discards all the old treatment of gruels, fruits, sweets, etc., as especially harmful. No whiskey or wines are allowed. The food is concentrated and chiefly nitrogenous, consisting of milk and animal foods, and avoiding all substances which undergo acid fermentation in the stomach. By thus relieving the dyspeptic symptoms the tendency to cardiac disturbance is very materially lessened.

For the heart, *digitalis* is employed with the greatest benefit, but its administration should not commence so long as the hypertrophy affords compensation.

In aortic insufficiency, however, DR. DRAPER considers digitalis dangerous. As the regurgitation of the blood takes place during the cardiac diastole, the effect of this drug would be to increase regurgitation by lengthening this diastole, from which the ventricle, thus over-distended by the two streams of blood, might be unable to recover itself. The use of digitalis, therefore, only aggravates the constant danger from syncope from anæmia of the brain, which obtains in this lesion. He makes no absolute rule, however. In some instances, he finds that cautious dosage may afford benefit by increasing the heart's action, but dizziness and distress are very apt to follow. When insufficiency at the mitral valve is also present, the administration of digitalis causes no un-

pleasant effects from the aortic complication; but, on the contrary, by regulating the cardiac action and strengthening it, actual good results. *Opium* is believed by DR. DRAPER to be most valuable in aortic regurgitation. Morphia, he advises, increases the force without diminishing the frequency of the heart; and, probably producing cerebral hyperæmia, it is therefore indicated when there is a condition of dizziness, cerebral anæmia, and a tendency to syncope. If angina pectoris is also present, he finds that morphia exerts a specific influence. The hypodermic method of administration is preferred, acting with more promptitude.

In mitral lesions he finds digitalis is extremely serviceable, giving *infus digitalis* ʒ *i-iii. three times daily.* This slows and regulates the heart's action, increases its force, preserves the arterial tension, and has a specific action on the sympathetic cardiac plexus. Hence, in these patients having dyspnœa, cough, and rapid, feeble, and irregular pulse, digitalis is especially indicated. In stenosis it affords benefit by lengthening the diastole, giving time for the left ventricle to fill, and thus relieves the effect of the obstruction. In mitral insufficiency the use of digitalis by prolonging the diastole allows the ventricle to fill more completely, while at the same time it increases the systolic power. But caution is advised in its administration, lest from a too early or too frequent use the heart muscle soon fail to derive its beneficial effects. When the pulse is sufficient, though feeble, digitalis is not indicated. For admin-

istration, the infusion, if made from ʒ i-ii–Oi. is preferred to the tincture. *Iron* is also employed, especially where anæmia is present, and with great assistance to the heart. The following is the formula for Blaud's pill, used at this hospital:

℞. Ferri sulph.
Potass. carb. . . āā. grs. iiss.
M. ft. pil. No. i.

When dropsy is a prominent symptom, absolute rest is insisted upon,and the diet carefully regulated. Dr. Draper's treatment depends largely upon nutrition to improve the quality of the blood, and increase the eliminating power of the kidneys and bowels. This he considers far better than any violent diuretic or diaphoretic measures. He therefore relieves the anæmic condition with iron, tonics, and good, nutritious food; at the same time an occasional purge is given with good effect, together with diuretics. The following tonic mixture is kept constantly on hand:

℞. Strych. sulph. . . . grs. viii.
Cinchonidiæ sulph. . . ʒ i.
Tinct. ferri chlor. . . ʒ vi.
Tinct. zingib. . . . ʒ ii.
Glycerinæ
Acid. phosphoric. dil. . . āā. ʒ xvi.
M. Sig. A teaspoonful three times daily.

The digitalis is also continued, and is usually very serviceable. *Acetate of potassium* is often used, or, where diuretics are not tolerated, *jaborandi* is given,

the following method of hypodermic administration being frequently resorted to:

℞. Pilocarpinæ mur. . . gr. i.
Aquæ distil. carbol. . . m. l.
M. Dose, ten minims.

Bandaging of the limbs is also employed in certain cases.

In the later stages of cardiac dropsy, however, with general anasarca present, when these measures fail or are too slow in action, still much is done to render the patient comfortable. The connective tissue is tapped in various situations, several *needle-punctures* being made in the most œdematous portions, by which means considerable fluid is drawn off, giving relief from what seemed impending death. Opium is also given. This is usually attended with success, sometimes complete reduction of the fluid occurring within a few days. The procedure is an extremely disagreeable one, although often affording the only relief, and DR. DRAPER advises that it be practiced with great care. A fine needle is selected and puncture made, as a rule, somewhere below the knee, as here it is less liable to give rise to bad effects. Sometimes the thighs are also made use of, and occasionally the abdomen and scrotum. After which the part is carefully washed, dressed with ointment, and the surrounding integument well protected from the fluid. If the bedding is allowed to get saturated, the skin, which is peculiarly sensitive in this moistened condition, becomes irritated and inflamed, setting up erythema.

By these and other measures peculiarly adapted to individual cases, and under the influence of hospital discipline together with rest, good diet and medication, these patients very speedily improve and are quite well for a time.

Regarding the subsequent treatment, that is to say, when the patient is in the best possible condition and able to be about, DR. DRAPER requires the careful avoidance of all kinds of exertion, all undue excitement, etc., both of the physical and of the moral state. He directs the patient to lead a quiet life, engaged in some mental occupation, or in the very lightest manual labor, where no inordinate strain shall be demanded to disturb the heart's action. He also gives strict injunctions regarding *food*. It is especially desirable that everything tending to produce flatulence should be avoided. For a *carminative* the following is very extensively employed at this hospital with excellent effect:

℞. Tinct. opii . . . . gtt.xx.
Ol. anisi
Ol. caryophyl.
Ol. gaulth. . . . . āā gtt.ii.
Tinct. asafœtid. . . . fl. ʒ i.
Magnes. carbon. . . . ʒ i.
Aquæ menth. pip. . . . fl. ℥ iii.
M.

Intemperance, both in eating and drinking, is to be abstained from, and the food must be simple, but of the most nutritious quality. This he believes to be of primary importance. Especial guard is there-

fore to be made against dyspepsia; more particularly acid dyspepsia. Quantities of carbonaceous foods should never be allowed, thus excluding sweets, farinaceous and all fattening foods which are calculated for those who exert considerable muscular energy. Alcohol in any form is harmful and must never be taken.

These minute details DR. DRAPER considers of vastly more importance than the administration of drugs. He also derives much benefit, however, by an occasional purgation or diuresis, relieving a generalized congestion. Or heart tonics may often be required; of these he finds digitalis of the greatest value. But he urges that especially by the judicious management of cardiac diseases there is much to be accomplished, and its importance, he thinks, cannot well be magnified.

PRESBYTERIAN HOSPITAL.

When there is a condition of œdema, with more or less dyspnœa present, DR. F. A. BURRALL gives *strychniæ sulph. gr.* $\frac{1}{20}$ *three times daily*, together with *infusion of digitalis* ℥ *ss. three times a day.* This is usually very effectual. But in the later stages, where there is pulmonary œdema and hydrothorax with orthopnœa and cyanosis, when digitalis ceases to be of service, DR. A. H. SMITH has obtained almost immediate relief from the dyspnœa and distress, by the administration of *ext. quebracho fl., m. xxx-xl.* In some instances, however, this remedy has failed.

ROOSEVELT HOSPITAL.

In the early stages, as long as the lesion causes no interference with the natural function of the heart, DR. FRANCIS DELAFIELD does not consider medicinal treatment indicated. He directs that rest and quiet be obtained, with abstinence from all possible exertions, etc. When drugs are called for, he places most reliance on potassium iodide, administered in doses sufficient to regulate the heart's action; he usually gives *potassii iodidi, grs. x. three times daily*, continuing it for some time. The following tonic is much used at this hospital:

℞. Strychniæ sulph. . . . grs. xvi.
Tinc. ferri chlor. . . . ℥xii.
Syrup. simp. . . . .
Aquæ . . . . āā. Oiv.
M. Sig. Two teaspoonfuls.

ST. LUKE'S HOSPITAL.

When there is a condition of venous obstruction with increasing dyspnœa, œdema, cyanosis, and attacks of orthopnœa, *acetate of potassium* with *infusion of buchu* is ordered, and poultices of digitalis leaves applied to the chest. If pulmonary œdema supervenes, dry cups are used repeatedly until relieved. In many instances DR. G. G. WHEELOCK finds *fluid extract of quebracho m.xx-℥ss. three times daily* of rare service in relieving the dyspnœa when all other remedies fail.

MT. SINAI HOSPITAL.·

In children, when the heart lesion is dependent upon chronic pulmonary obstruction, *iron* is given, sometimes in form of the syrup of the iodide. DR. JACOBI, however, prefers the pyrophosphate, or dialyzed iron, especially where anæmia is marked. To regulate the heart's action, he administers *fluid extract of digitalis, m.ii., three times a day.* Where gastric disturbance is present, the *subnitrate of bismuth* is employed with good effect. If epistaxis is prominent, which not infrequently happens, depending on the heart lesion, he often controls it by the use of iron and digitalis. When there is a condition of œdema of the lungs with more or less general anasarca, severe dypsnœa and cyanosis, digitalis is given together with inhalation of oxygen. Should these measures fail, *infusion of jaborandi,* ʒ *iss. pro re nata,* is administered, and often with prompt relief.

In cases of heart disease associated with chorea minor, DR. JACOBI places the child upon a course of iron, avoiding those preparations which act as vascular irritants, such as the muriated tincture, or tincture of the chloride. He gives:

℞. Ferri pyrophosphat. . grs. xx-xxiv.
Sig. This amount daily.

Digitalis is also employed, either the *fluid extract m.ii–iv. in twenty-four hours,* or an equivalent amount of the tincture. To control the chorea itself, which is considered a highly important feature, he

finds *arsenic* superior to other remedies, using the sodium or potassium salt, as follows :

℞. Liq. potassii arsenit. . . gtt. iii.
Aquæ q. s.
Sig. Dose, three times daily, after meals.

This he gradually increases, if necessary, up to gtt. vi. When the muscular twitchings persist during the night-time so that the sleep is disturbed, it being exceedingly desirable that these patients should rest well, Dr. Jacobi makes use of the following with excellent service :

℞ Chloral hydrat. . . . grs. xv.
Potass. bromid. . . grs. xv-xxv.
Sig. Dose, at bed-time.

PERICARDITIS.

DEFINITION.—An inflammation of the fibro-serous membranous sac which envelops the heart, and the great vessels at their passage from or into the organ.

BELLEVUE HOSPITAL.

The essential element in the treatment of pericarditis is directed to the condition with which it is associated. In all cases of acute rheumatism DR. ALONZO CLARK considers it of the greatest importance to examine the heart. He finds that the cardiac lesion, as a rule, follows the rheumatic attack about the fifth day; therefore he endeavors to effect an early cure of the articular affection, and thus, if possible, prevent the pericarditis. The patient is placed on the alkaline treatment, or upon the *salicylate of soda, in doses of grs. xv–xx. every two or three hours.* This during the first day, and the same amount once in three or four hours on the second day. By this means he frequently succeeds in controlling the rheumatism in a few hours; usually within two, three or four days. Where the drug disagrees, causing vomiting, it is administered by injection. If a blister is needed, this is applied at the border of

the diaphragm and upward; or he sometimes gets rid of the effusion by means of iodine applied over the cardiac region. *Opium* is also given in doses sufficient to ease the heart and correct its short, irritant beat.

In idiopathic cases, DR. CLARK applies a blister to the præcordium, and if the pulse is full and strong a laxative is given. In full-blooded patients he sometimes resorts to *venesection*, drawing blood to ℥ vi-xii. Complete rest is also enjoined, together with a carefully regulated diet and avoidance of all exposure.

The following salicylic acid mixture is used at this hospital:

℞. Acid. salicylici . . grs. clx.
Potass. acetat. . . . grs. cccxx.
Glycerinæ . . . . fl. ℥ i.
Aquæ q. s. ad . . . fl. ℥ iv.
M. Dose: A teaspoonful to a tablespoonful.

DR. LOOMIS confines the patient to bed, and enforces absolute rest and quiet. Hot anodyne poultices are applied over the præcordial region, usually affording great relief. Internally he gives opium in small doses to relieve the pain. *Opium* is also preferred by him for its action on the heart. For this purpose, the irritability being more marked during the night and the patient also more restless, larger doses are required at that time; but he particularly cautions against producing any narcotic effects. For the effusion, DR. LOOMIS resorts to the same means of treatment which he prescribes in pleurisy. *Iron and stimulants* are administered

together with a highly nutritious diet, avoiding everything which tends to quicken the action of the heart. During convalescence careful attention to hygiene is advised. As regards *aspiration*, if certain that pus is present he would not hesitate; but in all other instances he advises the most careful consideration before resorting to such a procedure.

In addition, his treatment is also directed toward the condition upon which the pericardial affection depends, *e. g.*, rheumatism, etc. Occurring in fevers, especially of the pyæmic and septic type, with much depression of the vital powers, free stimulation and sustaining measures are employed.

In DR. AUSTIN FLINT'S wards the treatment also varies with the primary condition, and according to the amount of effusion present and the intensity of the inflammation, as denoted by the general and local symptoms. He considers rest and quiet essential points in the treatment. Occurring with rheumatism he places the patient on the following:

℞. Mist. acid. salicylic. (grs. xlv-℥ i) . ℥ ss.

Sig. Dose, every three hours.

DR. FLINT has, however, noticed that since the use of salicylic acid in rheumatism, cardiac affections have become more common than before. Therefore he believes it to be of the greatest importance, when prescribing the salicylic acid treatment, to administer the alkalies in sufficient quantity to render the urine alkaline as speedily as possible, with a view to diminishing the liability to the cardiac affection. If this is done at the onset of the rheumatic attack, he

thinks it very probable that the heart trouble would not occur. For this reason, therefore, with the above he also gives *sodii bicarbon. ʒ ss. every three hours.*

Besides these means of treatment, if the effusion is abundant, he resorts to diuretics and cathartics, but avoiding any considerable general debility. For a diuretic he often uses the following:

℞. Potass. acetat. . . . . ʒ ss.
Infus. digitalis . . . . . ℥ ss.
M. Sig. Dose, every four hours.

Sometimes he applies *counter-irritation* by means of blisters or iodine, with beneficial effect. If pain is prominent it is relieved by opium. He also continues the use of the alkalies to prevent, if possible, the inflammation increasing. The diet is made nutritious and sustaining without exciting the heart's action.

The following is used at this hospital as an anti-rheumatic:

℞. Sodii et potass. tart. . . . ℥ ss.
Potass. nitrat. . . . . ʒ v.
Vin. colchici sem. . . . fl. ʒ ii.
Aquæ q. s. ad . . . . fl. ℥ ii.
M. Dose: A teaspoonful.

NEW YORK HOSPITAL.

Dr. W. H. Draper's treatment is based on the accompanying condition. If the pericardial complication arises in the course of rheumatic fever, he prescribes *salicylic acid in doses of grs. xv-xx. every two*

hours. This is continued until ʒ ii. have been taken, and is usually followed by very gratifying results. Sometimes the soda salt is used instead. Absolute rest is also considered of great importance. To obtain this he not only directs that the most stringent rules be enforced, but, if necessary, opium is also given in doses sufficient for this purpose. For the pericardial affection counter-irritation is employed when indicated, together with the internal administration of *opium and digitalis;* this he finds not only controls the pain, but alleviates the irritable dyspnœa and the general cardiac distress. Not infrequently the dyspnœa is found to be due to distension of the stomach with gas; this he corrects by the use of ammonium carbonate. Either the *muriate or carbonate of ammonia* is also given to keep, if possible, the fibrin in solution. Should the effusion become so great as to cause excessive dyspnœa, *paracentesis* is resorted to. Dr. Draper does not believe that mercury has any specific effect regarding the fibrinous exudation. The diet is made nutritious in quality, at the same time everything tending to produce flatulent dyspepsia being carefully avoided. The following diuretic pill is much used at this hospital:

℞. Pulv. scillæ . . .
Pulv. digitalis . . .
Massæ hydrarg. . . . āā gr. i.
M. ft. pil. No. i.

As an anti-rheumatic the following is frequently employed:

℞. Potass. iodidi . . . . ℥ v.
Vin. colchici sem. . . . ℥ i.
Tinct. cimicifug. rac. . . . ℥ ii.
Tinct. stramon. . . . . ℥ ss.
Tinct. opii camph. . . . ℥ iss.
M. Dose: A teaspoonful three times daily.

PRESBYTERIAN HOSPITAL.

Besides the usual measures adopted for this affection, local blood-letting is employed. When the præcordial pain is most intense, from one to three *leeches* are applied over the apex of the heart and blood to the amount of ℥ ss–i. drawn. This gives the greatest relief, frequently diminishing the pulse and entirely relieving the pain and dyspnœa in a few minutes. Also, where the temperature is high and quinine alone fails, the above measure combined with the administration of *quiniæ sulph. grs. xx–xxv.*, is followed by the most excellent results.

CHARITY HOSPITAL.

As a rule, the treatment at this hospital does not materially differ from that adopted at Bellevue. The following is used as an anti-rheumatic:

℞. Sodii et potass. tart. . . . ℥ ss.
Vini colchici sem. . . . ℥ ii.
Aquæ q. s. ad . . . ℥ ii.
M. Dose: A teaspoonful.

ST. FRANCIS' HOSPITAL.

When the præcordial pain is intense and resists

other remedies, DR. J. H. RIPLEY often finds it yield to the application of a plaster prepared by dusting *chloral hydrate* on the ordinary picis burgundicæ, previously spread on a suitable piece of adhesive plaster. The salicylic acid treatment is employed by him as follows:

℞. Acidi salicylici . . . ʒ ii.
Sodii bicarb. . . . ʒ iss.
Aquæ ad . . . . ℥ iv.
M. Sig. A tablespoonful every two hours.

MT. SINAI HOSPITAL.

When associated with rheumatism, DR. JACOBI administers *salicylate of soda*. By this means he controls the rheumatic affection, and, with the occasional use of digitalis and morphia, affords relief to the præcordial pain and distress. In some instances he also uses cold in the shape of *ice-bags* applied over the region of the heart to allay the pain.

ROOSEVELT HOSPITAL.

Salicylic acid is also prescribed at this hospital, as follows:

℞. Acid. salicylic. . . . grs. clx.
Sodii bicarb. . . .
Potass. bicarb. . . . āā ʒ ii.
Syrup. limonis . . . ℥ i.
Aquæ ad . . . . ℥ iv.
M. Dose: A tablespoonful thrice daily.

DR. W. H. THOMSON uses the following combina-

tion, a favorite with him also in his service at Bellevue Hospital:

℞. Sol. acidi salicylic. . . . ℥ ii.
Tinct. gaultheriæ . . . ʒ i.
Aquæ ad . . . . ℥ iv.
M. Dose: A tablespoonful.

HYDROPERICARDIUM.

DEFINITION. — A preternatural accumulation of the normal serous secretion of the pericardium.

BELLEVUE HOSPITAL.

DR. ALONZO CLARK treats this condition purely as a dropsy elsewhere. He restricts the patient in the amount of fluids taken, and administers diuretics together with digitalis for its effect on the heart. The following is usually employed by him :

℞. Infus. digitalis . . . . ℥ i.
Potass. acetat. . . . ʒ ii–iv.
Aquæ ad . . . . . ℥ ii.
M. Dose : A tablespoonful thrice daily.

In some the acetate of potassium causes vomiting, therefore DR. CLARK prefers the following as a more elegant and agreeable mode of administration :

℞. Potass. carbon. . . . grs. xx.
Aquæ . . . . . ℥ ss.
M. et add.
Succ. limon. recent. . . ℥ ss.
Sig. Dose, every two hours.

With this he also gives :

℞. Infus. digitalis . . . . ʒ ii.
Sig. Dose, three times daily.

Where the fluid cannot be made to disappear, and dyspnœa is intense, paracentesis is resorted to.

Dr. Loomis especially directs his treatment to the cause of the effusion. The direct means employed are similar to those adopted by him for the treatment of hydrothorax.

ENDOCARDITIS.

DEFINITION.—An inflammation of the membrane lining the interior of the heart and its cavities, and covering its valves.

NEW YORK HOSPITAL.

The treatment at this hospital consists primarily in absolute rest in bed, perfect quiet, and avoidance of all excitement. Occuring in rheumatic fever, DR. W. H. DRAPER administers the *salicylic acid* treatment as in pericarditis. If there is much anæmia, iron in some form is employed; *Blaud's pills* being very serviceable. Where there is much præcordial pain, with dyspnœa and palpitation, he gives *ext. quebracho fl.*, *m. xx–xxx*, with great advantage. If the temperature runs high and prostration is marked, quinine is also given, combined with the administration of stimulants; thus:

℞. Spts. vini gall. . . . ℥ss.
Sig. Dose, every two or three hours.

BELLEVUE HOSPITAL.

As a complication of rheumatism, DR. AUSTIN FLINT'S treatment does not differ materially from

that of pericarditis. *Salicylate of soda* or salicylic acid is used, combined with the administration of the *alkalies*.

Under similar conditions, DR. ALONZO CLARK also employs the corresponding treatment. When, however, endocarditis is recognized as occurring alone, he at once *abstracts blood* to the amount of ℥ viii–x, in order to relieve the over-worked valves. With this he combines the use of opium in moderate doses, sufficient to quiet the irritant action of the heart. Counter-irritation, while doing no harm, he considers entirely useless.

DR. LOOMIS is also governed in his treatment by the associate condition. If rheumatism, this receives prompt attention, as elsewhere described. The following is one of DR. LOOMIS' tonics used at this hospital:

℞. Sol. quiniæ sulph. (grs. xv–fl. ℥ i) ℥ ii.
Tinct. ferri chlor. . . . ℥ ss.
Spts. chloroformi . . . ʒ vi.
Glycerinæ q. s. ad . . . ℥ iv.
M. Dose: A teaspoonful.

Occurring with blood-poisoning, stimulants are freely used. Coming on in the course of Bright's disease, those agents which hasten the elimination of urea are employed. Occurring with the fevers, antipyretics are administered. In all cases, he considers the presence of endocarditis a demand for prompt and energetic treatment. *Rest* is all important, and must be absolute. For this purpose, when required, he administers opium, but in moderate

doses. Stimulants, brandy and iron are also given as indicated, and the diet made of the most nutritious character throughout. If the heart becomes feeble, digitalis is employed. As regards the *iodide of potassium*, DR. LOOMIS thinks it doubtful whether there is any benefit derived from its administration.

HYPERTROPHY OF THE HEART.

DEFINITION.—An abnormal growth of the muscular fibres of the heart, causing increase in bulk of the organ by thickening its parieties, and generally resulting in dilatation of its cavities.

BELLEVUE HOSPITAL.

DR. LOOMIS directs that the use of alcohol must be avoided, and every intemperance in eating, habits, and exercise, both physical and mental, be carefully guarded against. Constipation should be prevented by regular habits and diet, and cathartics employed only when absolutely necessary. When signs of cerebral oppression are prominent, to lessen the force of the heart's action he places most reliance upon the use of aconite in full doses; given thus:

℞. Tinct. aconit. rad. (Fleming) gtt. ii–iii.

Sig. Dose, every three or four hours.

From this he obtains more prompt relief from the vertigo, etc., than by any other means. Digitalis is, as a rule, contra-indicated.

NEW YORK HOSPITAL.

In hypertrophy with dilatation, with weakened pulse and irregular cardiac action, DR. W. H. DRAPER employs *digitalis* with advantage, strengthening the force of the heart and affording great relief. When flatulence is present, a brisk purge is given with good effect. The diet is made nutritious and easily digestible.

MT. SINAI HOSPITAL.

In children, where cardiac hypertrophy depends upon a chronic bronchitis, DR. JACOBI aims to diminish and to cause absorption of the bronchial exudation, thus relieving the pulmonary obstruction. To accomplish this he gives:

℞. Potass. iodidi . . . grs. iii–v.
Aquæ q. s.
M. Sig. Dose, three times a day, after meals.

DILATATION OF THE HEART.

DEFINITION.—An enlargement of the cavities of the heart, attended with thinning of the parietes of the organ and a diminution of its contractile power.

BELLEVUE HOSPITAL.

DR. ALONZO CLARK directs that the patient abstain from all exercise, and that everything tending to excite the heart's action be most carefully avoided. He enjoins absolute rest and quiet, although permitting the patient to walk about the room at times, when so disposed. He also endeavors to enrich the blood and delay the progress of the disease by administering a good, nutritious diet, taken frequently and to the full extent of digestion; this is also assisted by the use of chalybeates, which further serve to correct the anæmic condition. *Digitalis* is given in doses sufficient to control the irregularity of the heart. *Bleeding*, for the relief of dyspnœa, is never resorted to by DR. CLARK, under any circumstances; he considers it an extremely dangerous procedure. For the œdema, the activity of the kidneys are increased by the following:

℞. Infus. digitalis
Potass. acetat. . . . āā ʒ ii–iv.
M. Sig. This amount daily.

If the patient is strong and able to bear the sweating, he often employs the following with advantage :

℞. Tinct. jaborandi . . gtt. xx.
Aquæ q. s.
Sig. Dose, at night.

Simple dilatation, Dr. CLARK believes to be extremely rare ; he has met with but two or three cases during his life.

DR. LOOMIS' treatment is directed toward sustaining the nutrition of the patient and regulating the heart's action. For the former he prescribes a diet, nutritious in character, often consisting entirely of milk, and administered frequently in small amounts. In certain cases he also combines small doses of stimulants with the food. *Iron* is also given, as a rule, especially when the patient is anæmic. The following is used at this hospital :

℞. Quiniæ sulph. . . grs. xxx.
Acid. sulph. dil. . . q. s.
Aquæ . . . . ℥ ii.
Tinct. ferri chlor. . . ʒ ii.
M. Dose : A teaspoonful.

Mildly stimulating baths are at times of service to keep up a free action of the skin. Abundance of fresh air should be obtained, and careful attention given to hygienic regulations.

To fulfill the second indication DR. LOOMIS enforces *absolute rest* and quiet, observing the greatest care in avoiding all inordinate exercise or undue exertion of any kind. He also resorts to various medicinal

agents, such as may be required by the special conditions of each case. The mineral acids and vegetable tonics are employed, when indicated, to improve the digestion and appetite. The following is from this hospital:

℞. Tinct. cinchonæ co.
Tinct. gent. co. . . āā ℥ i.
M. Dose: A teaspoonful.

Where systemic congestions are present, an occasional purge of aloes or calomel is administered with good effect. For the heart he finds *digitalis* most beneficial, giving it in sufficient amount to control the irregular cardiac action; and even after this is secured, the drug is still continued, but in small doses. When, in time, digitalis fails to exert this effect, he finds that a combination of *opium* or *belladonna* with digitalis is very serviceable temporarily. For the attacks of dyspnœa, *hydrocyanic acid* is often useful. The following is kept constantly on hand:

℞. Potass. cyanidi
Morph. sulph. . . āā. gr. xvi.
Syrup. tolutan. . . ℥ xvi.
M. Dose: A teaspoonful.

Or, he sometimes resorts to counter-irritation by means of dry cups.

In all cases, the course of the dilatation being prolonged over a considerable time, DR. LOOMIS employs numerous remedies and means demanded in individual instances for temporary benefit, but, as a rule, he relies almost solely upon digitalis and iron.

ROOSEVELT HOSPITAL.

In the later stages, when there is a condition of œdema and pleuritic effusion, with dyspnœa, albuminuria, and possibly symptoms of uræmic poisoning, Dr. W. H. Thomson resorts to the following plan of treatment. Stimulants are administered freely, together with:

℞. Infus. digitalis . . . ℥ ss.
Potass. acetat. . . grs. xv-xx.
M. Sig. Dose.

The following is also given:

℞. Ext. jaborandi fl. . , . ʒ ss.
Sig. Dose, at night.

If the bowels are constipated, *gtt.ii of croton oil* are given in pill form. Should these means fail in effect, with semi-coma approaching, the patient is placed in the hot-air bath and enemata of whiskey, milk, and fluid extract of jaborandi administered. If these are rejected, and the stupor increasing with severe dyspnœa, Dr. Thomson resorts to the following: the surface of the body is thoroughly oiled, and the patient then wrapped in blankets saturated with hot water; he also gives *pilocarpine gr.* $\frac{1}{10}$ hypodermically, together with the following by the mouth:

℞. Hydrarg. chlor. mit. . grs. xv.
Ext. jalapæ . . . grs. x.
Sig. Dose.

This is repeated if necessary. By either or all of these procedures diaphoresis is usually established,

which, if moderate, he assists by the continued injections of pilocarpine, as follows:

℞. Pilocarpine . . . gr. $\frac{1}{10}$.

Sig. Dose, every three hours, up to gr. ss.

If the bowels refuse to move, in addition to the above measures, he administers *gr.* $\frac{1}{20}$-$\frac{1}{10}$ *of elaterin*, every hour for three or four hours. The diet is of milk and lime water, together with soda powders and vichy given to relieve the vomiting when present, and alcoholic stimulation as indicated. This regimen is usually followed by very satisfactory results. Sometimes dry cups are also applied over the kidneys.

FATTY DEGENERATION OF THE HEART.

DEFINITION.—A change occurring in the muscular structure of the heart, resulting in the deposit of fatty molecules replacing the primitive filaments, and converting the muscular substance into fat.

BELLEVUE HOSPITAL.

DR. ALONZO CLARK'S treatment aims at causing absorption of the fatty material and reducing the supply of fat in the body. He instructs the patient to take what moderate exercise he can endure, according to his strength, and to abstain from all fattening foods including milk, cream, and fat of meats. The diet, however, he requires to be of the most nutritious quality, preferring meats, fowl, etc., and food made from wheaten flour; but allowing only lean meats and the vegetable foods that contain the least oily matter. With these dietetic measures he also combines the administration of the *bicarbonate of soda* to such a degree as it will be safely borne and produce the most effect upon the fatty degeneration; this he judges by a daily examination of the urine, which he requires to be kept in the slightest degree

acid. DR. CLARK considers this plan well worth a trial, although he thinks it doubtful if benefit may be derived from any treatment.

The following is used at this hospital:

℞. Sodii bicarb. . . . . ʒ i.
Tinct. zingiber. . . . . fl. ʒ ii.
Tinct. gent. co. . . . . fl. ʒ i.
Aquæ . . . . . fl. ʒ v.
M.

DR. LOOMIS endeavors to improve the tissue-making power of the blood by the administration of *tonics, iron, and cod liver oil*, with good food and plenty of fresh air. All over-exertion, both physical and mental, tending to excite the heart's action must be avoided, and rest and quiet obtained. Moderate stimulation is allowed, but the habitual or excessive use of alcohol is prohibited. By careful attention to these measures he believes that life may often be prolonged for many years. Digitalis is occasionally employed when venous congestion is prominent, otherwise he considers it of little or no value.

DR. AUSTIN FLINT also endeavors to place the general health of the patient in the best possible condition, and to improve the state of the blood. This he accomplishes by proper dietetic regulations, by the use of chalybeates if required, and by the adoption of the necessary hygienic measures. If any unusual weakness of the heart manifests itself, he derives a certain amount of benefit from the administration of *digitalis* as a cardiac tonic; or, at times, he employs *strychnine* and *nux vomica* for this

purpose. While the use of fatty foods are not entirely prohibited, yet he considers that they should be restricted within certain limits. He also directs that the patient take such exercise as is compatible with comfort; beyond this limit it is to be restricted.

℞. Tinct. ferri chlor. . . . ℥ v.
Quiniæ sulph. . . . . ℥ i–ii.
Strych. sulph. . . . . gr. i.
Syrup. aurant. flor. . . . ℥ iss.
Glycerinæ . . . . . ℥ i.
Aquæ q.s. ad. . . . . ℥ iv.

M. Dose: A teaspoonful three times daily, before meals.

The above is an excellent combination which has been used very extensively at this hospital by a former house physician.

PALPITATION.

DEFINITION. — An irregularity of the heart's action, during which the pulsations become more pronounced, usually intermittent, and more sensible; not associated, as a rule, with organic trouble, except, in certain instances, more or less hypertrophy of the organ.

BELLEVUE HOSPITAL.

In functional disturbance of the heart DR. AUSTIN FLINT directs his treatment to the removal of the cause. This he considers to be of primary importance. If dependent upon the use of tobacco, tea and coffee, alcohol, etc., these must be abandoned. Over-exercise, prolonged mental anxiety, excessive venery, and every thing tending to promote dyspepsia must be avoided. He administers tonic remedies and a good, wholesome diet with, in certain cases, a little wine. When anæmia is present he prescribes the chalybeates, with good, hygienic measures, a change of scene, if practicable, and means to improve the appetite and assimilation. The following is from this hospital:

℞. Ferri phosphat. . . . grs. ii.
Quiniæ sulph. . . . gr. i.
Strychniæ sulph. . . . gr. $\frac{1}{30}$.
Syrupi . . . . . ʒ i.
M. Sig. Dose.

Also:

℞. Acid. muriat. . . . ʒ iii.
Tinct. gent. co.
Aquæ . . . . āā ℥ viii.
M. Dose: A teaspoonful.

When associated with organic lesions, Dr. Flint advises care in attaching undue importance to the organic trouble, simply from the fact of a coexisting functional affection; for with the removal of this disturbance the organic lesion may give rise to no symptom whatever.

Dr. Loomis also treats the primary condition. Where anæmia is marked iron is employed with benefit. If dependent on the habitual use of alcohol, tobacco, or coffee and tea, these are to be abandoned. When associated with the gouty diathesis, remedies controlling this affection are resorted to. Where no apparent cause is ascertained, he prescribes a *cold sponge-bath* taken night and morning, combined with mild exercise, a plain diet, and the avoidance of all undue exertion. For immediate relief, those drugs which act specifically on the nerve centres and the diffusible stimulants are usually employed with success. Digitalis, he advises, should never be used, and, as a rule, narcotics are considered harmful.

Dr. Alonzo Clark advises moderation in all things, avoiding fast eating and any disorder of digestion. The patient should never eat to a full stomach. In persistent palpitation without organic disease, with a marked increase in the impulse of the heart, he makes use of the following:

℞. Tinct. aconiti rad. . . . gtt. i.
Aquæ q. s.
M. Sig. Dose, three times daily.

He thus maintains the continuous effect of the drug, sometimes with great satisfaction. In other instances where the hypertrophy is extensive he prefers *veratrum viride, in doses of gtt. i. of the fluid extract*, diminishing or increasing the amount according to the required indications. When occurring in a strong, robust patient with sthenic pulse, Dr. Clark often performs *venesection* with very gratifying results, bleeding to ℥ vi-x.

In palpitation without organic lesion, Dr. E. G. Janeway aims to remove the cause and secure rest, good food, change of scene, and entire release from care. He also advises that the various functions must be carefully attended to, and any local disorder in females removed by suitable treatment. Where the irregularity and palpitation persists, as in Graves' disease, and medical treatment is without avail, Dr. Janeway employs the *galvanic current* with most beneficial effects. He frequently reduces the rapidity of the pulse from 120 to 90 beats in a very few minutes, and has produced a cure in several cases. In applying the current he places one pole over the

back of the neck, the other over the sympathetic. This, of course, by its contiguity also stimulates the pneumogastric; and, besides acting on the nervousness and imagination of the patient by this method, which he finds of marked value in these cases, DR. JANEWAY considers that it is this stimulation of the pneumogastric, and not of the sympathetic, which affords relief. He uses the constant current, applying it three times a week, first to one side of the neck, then to the other. This treatment he also supplements by the administration of the *iodide of iron*, preferring Blancard's pills (U. S. P.). Another plan sometimes adopted by him is to cause the patient to take a number of long breaths. This slows the heart, but it also produces dizziness.

ST. LUKE'S HOSPITAL.

Removal of the exciting cause constitutes the chief element in the treatment. Where dyspepsia is present DR. BEVERLEY ROBINSON administers:

℞. Tinct. lavandulæ co. . . ʒ ss-i.
Sig. Dose.

with very good effect. Or, in other instances, as in hysterical women, *spts. ammon. aromatic.*, ʒ *i-ii.* will often give instant relief. When painful cardiac sensations are present with loss of sleep; or if slight indulgence in smoking makes the heart seem suddenly to stop, or beat forcibly and rapidly and then intermit; under these circumstances he advises careful attention to hygiene and abundant sleep and leisure. Should the

disturbance still persist, he enjoins total abstinence from tea, coffee and tobacco, and administers moderate doses of *henbane*, *chloral* or *aconite*, combined with the local application of a *belladonna-plaster* over the præcordial region. These measures, he finds, rarely fail to bring the heart into regular working order. During a painful attack of palpitation, DR. ROBINSON sometimes finds it necessary to give an opiate or antispasmodic. As a rule, however, he makes use of the following prescription with the greatest satisfaction in numerous instances:

℞. Tinct. lavandulæ
Spts. ammon. aromat.
Ætheris chloric. . . . āā ℥i.
Syrupi . . . . . ℥iii.

M. Dose: A teaspoonful in water every hour, till relief.

Where there is much weakness accompanied by fainting sensations, *alcoholic stimulants* are employed with benefit. He also resorts to other and variable means of treatment, according to the requirements of each particular case. If a plethoric state is present, mild depletory measures are used. If anæmia, iron is administered combined with a generous diet, and abundance of fresh air. In dyspeptics, stomachics are employed and regular meals ordered, together with exercise, horseback-riding, etc. Where the palpitation depends on a gouty diathesis, the potassium and lithium salts are his sheet anchors.

NEW YORK HOSPITAL.

In the treatment of persistent palpitation with Graves' disease, DR. W. H. DRAPER knows of no specific remedy. In recumbency some unexplained effect is produced which increases the inhibitory action of the pneumogastric nerve, and the pulsations are thus reduced from ten to twenty beats a minute. He therefore considers rest in the recumbent position all important, and in some cases this is resorted to by artificial means. Occurring in the course of the menopause, he thinks something may be accomplished by equalizing and regulating the circulation. For this purpose he believes *digitalis* to be a remedy of great value, and should be tried although it often fails. In some instances DR. DRAPER obtains marked benefit from the use of the *carbonate of iron*, combined with the administration of digitalis and the alkalies. The following is often employed at this hospital:

℞.	Potass. et sodii tart. . . .	ʒ ii.
	Potass. acetat.	℥ i.
	Syrup. zingiber. . . .	℥ i.
	Aquæ	℥ iii.

M.

He also recommends the administration of *strychniæ sulph., gr. $\frac{1}{30}$ three times daily.* Also *Fowler's solution* with some degree of service. He mentions a case which he cured (twenty years ago, and the patient alive to-day) by the *iodide of potassium;* but he has never since seen so much good result from its

administration, although in many instances its effects are very gratifying. In all cases iron is usually given with advantage; this is especially so in the palpitation of young persons, where he finds it of marked value.

The essential feature of treatment, however, he considers to be rest and quiet, avoiding all disturbance of the heart, and regulating the circulation with tonics, iron, quinine, etc. The following is from this hospital:

℞. Ferri et ammon. citr. . . ʒ i.
Tinct. nucis. vom. . . . ʒ ii.
Tinct. cinchonæ co. . . . ℥ iv.
M. Dose: A teaspoonful.

Where these various measures fail and all medicinal remedies are unavailing, and the symptoms are evidently permanent and progressive, DR. DRAPER endeavors to palliate the suffering by means of morphia, by stimulants, and by the use of quinine when fever is present.

ANGINA PECTORIS.

DEFINITION.—An affection of the heart, characterized by sudden, violent pain referred to the præcordial region, or about the sternum, shooting to the neck and left shoulder, sometimes to the arm, and backward to the scapula; accompanied by dyspnœa, great anxiety, the sense of suffocation, and a dread of impending death.

BELLEVUE HOSPITAL.

For the immediate arrest of the paroxysm, DR. AUSTIN FLINT uses stimulants more or less freely, either alcoholic or ethereal. Of the latter he prefers Hoffman's anodyne, using the following combination:

℞. Spts. æther. co. . . .
Liq. morph. sulph. (U. S. P.) āā ℥ i.
M.

Alcohol he gives in doses to produce a prompt and distinct impression, usually adding a few drops of laudanum, or paregoric elixir, with advantage. When a decidedly prompt action is required, he places most reliance on the following:

℞. Amyli nitriti . . . gtt. v.
Sig. To be inhaled from a cloth or sponge.

The good effect is almost instantaneous, and DR. FLINT prescribes this remedy repeatedly. Regarding the coexistent heart disease, his treatment is essentially that which belongs to valvular lesions and enlargement.

DR. ALONZO CLARK finds *Hoffman's anodyne*, by relieving the accompanying flatulence, of much service, often giving relief to the paroxysm, although not remedial.

During the paroxysmal attack, DR. LOOMIS has the greatest confidence in the free administration of *digitalis* combined with complete rest. He has very little or no faith in the diffusible stimulants, sedatives, and antispasmodics, and objects to the use of opium, chloroform, and amyl nitrite. In the interval between the attacks he directs that all emotional and physical excitement be avoided, and everything tending to produce flatulence and indigestion, thus disturbing the heart's action, be carefully prevented. Medicinally, the only prophylactic agents upon which he places any reliance are *iron*, *arsenic*, and *strychnia*, given daily in small doses. By this means he not infrequently succeeds in postponing and lessening the severity of the paroxysms. The following is an excellent combination, much used at this hospital:

℞. Tinct. ferri chlor.
Tinct. nucis. vom. . . āā m. x.
Aquæ q. s. ad . . . . ʒ i.
M. Sig. Dose, three times daily, after meals.

NEW YORK HOSPITAL.

DR. W. H. DRAPER prescribes a course of treatment which is both prophylactic and for the cure of the disease itself. The medicinal treatment he requires to be stimulating. For this purpose he employs *alcohol*, *amyl nitrite*, and *morphine* hypodermically. Of these he considers the injections of morphia of greatest service, as, besides acting as a stimulus in small doses, its effects last longer than alcohol. He also places much reliance on the following:

℞. Amyl. nitriti . . . gtt. iii-v.
Sig. Dose, by inhalation.

For the dyspnœa,he often gives *m.xx-xxx. of the fluid extract of quebracho*, and frequently with excellent results. DR. DRAPER further strictly enjoins that the patient be put to bed, kept quiet and at rest. This he believes to be of vital importance, requiring the greatest attention, and must be rigidly enforced.

To prevent recurrence of the attacks he advises care and attention on the part of the patient to the cardiac lesion (which is present, as a rule). He cautions against the abuse of stimulants, alcohol and tobacco, and against excitement or emotion of any kind. For the flatulent dyspepsia, which is so often a troublesome feature, he confines the patient to a simple diet; this should not be neglected. Besides these measures, he has resort to other means of treat-

ment, such as heart tonics, etc., in various instances, when in his judgment they are required.

When angina pectoris occurs without organic lesion, he considers it as a case of ordinary neuralgia and treats accordingly; giving iron, arsenic, strychnia, cod-liver oil, and plenty of out-door exercise, with a good nutritious diet; or any good nerve tonic. The following are from this hospital:

℞. Ol. morrhuæ . . . . ℥ vi.
Ol. anisi . . . . . ʒ ss.
Ol. sassafras. . . . . gtt. x.
Liq. calc. sacchar. . . . ℥ ii.
M.

(Not compatible with acids.)

℞. Acidi arseniosi . . . gr. $\frac{1}{5}$.
Ferri et quin. citr. . . . grs. lxxx.
Tinct. cinch. co. . . . ℥ ii.
M.

ANEURISM OF THE AORTA.

DEFINITION.—A spontaneous dilatation, incomplete and more or less distinctly circumscribed, of some part of the aorta, resulting from injury or disease of the arterial wall.

BELLEVUE HOSPITAL.

DR. LOOMIS requires that the patient have absolute rest in bed in the recumbent position; that all unnecessary movements, mental excitement, and everything stimulating the force of the cardiac action, be rigidly avoided. To this he adds a concentrated, nutritious, and well-regulated diet, which at the same time is diminished in amount. In regards to Tufnell's restricted rest and dietetic plan of treatment, DR. LOOMIS does not favor it. For internal medication he prefers *iodide of potassium* and *ergot*, as rendering by far the most valuable assistance in the formation of a coagulum, as well as in arresting the progress and allaying many of the distressing symptoms. For the intense pain he gives *morphia* hypodermically. This he finds not only affords relief, but also by regulating the cardiac movement it hinders the aneurismal growth, and by lessening the irritability

and restlessness of the patient it gives ease and quiet, which are so necessary to the treatment. *Belladonna* is also used locally for temporary relief. When the tumor is prominent, the constant application of an *ice-bag* is sometimes a source of much benefit in allaying the pain, besides diminishing the superficial inflammation and, he thinks, possibly assisting in formation of the clot. Caution is, however, advised against a too long continued application.

Regarding the surgical treatment of aortic aneurism, DR. LOOMIS looks with danger upon the injection into the sac of coagulating liquids. Galvanopuncture and the permanent introduction of wire or cat-gut he also discountenances. Several acupuncture needles introduced temporarily and retained for a day or two, he considers a less dangerous procedure, and thinks it might be tried with safety. But in certain cases, that is to say, when the aneurism is limited to the arch or includes the left carotid, he believes that *ligation* of the left carotid artery offers the greatest hope of success.

DR. AUSTIN FLINT places the patient upon a good nutritious diet, with absolute rest maintained in bed. While he does not favor Tufnell's rigid regulations, yet, in some instances, he enjoins *absolute rest* for a number of months, combined with a diet which is simple, strictly nutritious, and sufficient for the wants of the system, but nothing beyond. For internal medication, he gives :

℞. Potass. iodidi . . . grs. x-xv.

Sig. Dose, three times daily.

This he considers an exceedingly valuable remedy in many cases. Commencing at once the systematic use of the drug, he gradually increases it up to the point of comfortable tolerance (which DR. FLINT insists is essential to the treatment), and continues the administration for a considerable period of time. By this means, in certain cases, marvelous results have obtained. He has frequently seen the beneficial effect of this remedy, not only in relieving the pain, distress and other symptoms, but also in the marked diminution of the aneurismal sac. Even where the suffering is intense, with œdema of the extremities and dyspnœa so severe that the patient is unable to assume the recumbent postion, under the administration of iodide of potassium DR. FLINT has observed amelioration of all the symptoms and, indeed, apparent recovery seemed to follow.

When dyspnœa and cough are prominent, and for the distressing pain caused by pressure of the tumor, he gives small hypodermic injections of *morphia*. Quebracho is often used with great advantage in relieving the dyspnœa. In certain instances where potassium iodide has been given up to iodism without avail, DR. FLINT has prescribed :

℞. Ext. quebracho fl. . . . 3 ss.

Sig. Dose.

with almost immediate and complete relief, lowering the pulse and respiration to the normal.

DR. ALONZO CLARK directs that the patient be kept as quiet as possible, free from every manner of excitement, with rest in bed for a period of several

months. He also prescribes a moderate diet, giving solid food in the smallest amount. Combined with these measures he orders *potassium iodide, grs. x. three times daily.* This administration he continues for a term of weeks or months. For the relief of the intense pain produced by pressure of the aneurismal sac, DR. CLARK applies an *opium-plaster* to the chest with very gratifying effect.

At this hospital it is strongly advised by one of the visiting physicians that two doses of opium should never be given at shorter intervals than one and a half or two hours. This rule he considers of grave importance. Where it has been disregarded, he has seen disastrous results follow from the sudden and apparently cumulative action of the drug.

NEW YORK HOSPITAL.

DR. W. H. DRAPER does not consider treatment very hopeful under any circumstances. *Complete rest* is a desirable factor, as it diminishes the force of the circulation and assists in the formation of the coagulum. This he enforces. Of the drugs, he regards the *iodide of potassium* as a remedy of great value. *Digitalis* is also used, thus lessening the frequency of the cardiac contractions; except where there are symptoms of vertigo, dizziness, etc., indicating aortic regurgitation. For the pain, *morphia* is given hypodermically. The following solution is usually employed at this hospital :

℞. Morphiæ sulph. . . grs. lxxx.
Aquæ destil. carbol. . . fl. ℥ v.
M. et filt.

When there is a condition of unusual excitement and restlessness, followed by syncope, whiskey and digitalis are administered.

In aneurism of syphilitic origin, Dr. Draper has found great benefit derive from the use of potassium iodide, often relieving the dyspnœa, pain and the accompanying symptoms of distress. He considers it probable, however, especially in cases of cure, that the lesion has been a gummy tumor pressing upon the aorta, instead of an aneurism.

In such instances the following prescriptions from this hospital may be found very serviceable:

℞. Hydrarg. bichlor. . . . gr. i.
Potass. iodid. . . . . ʒ ii.
Tinct. cardam. co. . . .
Tinct. gentian. . . . āā ℥ i.
M. Dose: A teaspoonful.

Or:

℞. Hydrarg. biniod. . . . gr. ss.
Potass. iodidi . . . . ʒ i.
Syr. sarsaparil. co. . . . ℥ i.
M. Dose: A teaspoonful three times a day.

Dr. C. E. Hackley orders a diet of light and easily digested food, the avoidance of all excitement, and the bowels kept open by laxatives. The following mixture is kept constantly on hand:

℞.	Sodii et potass. tart. .	grs. cmlx.
	Ferri et potass. tart. .	grs. cccxx.
	Aquæ menth. pip. .	fl. ℥ iv.
	Aquæ q. s. ad. . .	Oi.

Under this treatment the dyspeptic symptoms are usually controlled and the pain considerably lessened, thus affording great relief and comfort.

In some cases *Tufnell's* plan of treatment is resorted to. This consists in placing the patient in bed, with absolute rest in the recumbent position enforced. The diet is of the most restricted quality, especially the fluid portion, and made up as follows:

Breakfast—	Bread and butter . .	℥ ii.
	Cocoa or milk . . .	℥ ii.
Dinner——	Meat, boiled or broiled .	℥ iii.
	Potatoes or bread . .	℥ iii.
	Water or light claret . .	℥ iv.
Supper——	Bread and butter . .	℥ ii.
	Milk	℥ ii.

The object of this treatment is, (*a*) by rest and avoidance of all muscular exertion to lessen the number and force of the cardiac movements, and thus slow the current of blood; (*b*) by restricting the fluid portion of the food to a minimum to increase the fibrinous element of the blood. Hence favoring the formation and deposit of those layers of fibrin within the sac, which is the first step in the curative process. Dr. Hackley's observations, post mortem, certainly go to show that this treatment is to a certain extent effectual; nevertheless, the excellent results claimed

for it abroad have not been realized in this country.

Dr. T. M. Markoe recommends the following plan by which he has observed some very promising results. Indeed, in favorable cases, he has sometimes succeeded in curing aneurism. Rigid observance is, however, required. He directs that the patient have *complete rest* in bed, with perfect quiet and freedom from all excitable causes, and every unnecessary movement avoided. His treatment then consists in diminishing the amount of the diet in such a manner that, although it shall be nutritious, yet the quantity shall be very small. The amount of fluid is also restricted to a minimum. In addition to these measures, he also advises the administration of those remedies which increase the plasticity and tone of the blood. The anæmia, which is usually present is, as a rule, progressive. This is to be cared for by the appropriate means. He may also resort to the administration of potassium iodide, the iodide of iron, and the citrate of iron and quinine. The following is an excellent combination:

℞.	Ferri et quiniæ citrat. . .	grs. lxiv.
	Tinct. aurant. amar. . .	fl. ʒ ii.
	Elix. simplicis . . .	fl. ʒ i.
	Vini xerici	fl. ʒ ii.
	Aquæ q. s. ad . . .	fl. ʒ iv.

M.

ROOSEVELT HOSPITAL.

Dr. Francis Delafield administers *potassium iodide* in doses determined by its effect on the heart.

This he continues for a considerable period of time. In some instances, at this hospital, when the tumor is prominent, *strapping* is applied, and found to be very serviceable, not only in lessening the size of the tumor, but also by diminishing the pain and affording great temporary relief. This measure is also supplemented by the use of potassium iodide.

ST. LUKE'S HOSPITAL.

Quebracho is employed by DR. G. G. WHEELOCK with great advantage in the dyspnœa attending aneurism; given thus:

℞. Ext. quebracho fl. . . m. xx–℥ ss.

Sig. Dose, three times daily.

He has often found this drug serviceable when all other remedies have failed.

PRESBYTERIAN HOSPITAL.

For the dyspnœa DR. A. H. SMITH gives *fluid extract of quebracho, m. xx–xl,* and frequently with entire relief.

In regard to *ligation of the carotids* for aneurism occurring near the heart, DR. JOHN A. WYETH'S conclusions, based on clinical experience, are of great importance. Of eight cases involving the aorta alone, the left carotid was ligated in six and all recovered with improvement; the right carotid was tied in the remaining two cases, one of which died, the other recovered. For aneurism involving the innominate and aorta, the ligature was applied

to the right carotid in five instances, all fatal ; to the left carotid in two cases, one fatal and one recovered with improvement. Where the innominate alone was implicated, of nine cases in which the right carotid. was tied, six died and three recovered (two of these dying later). Of six cases in which the innominate and one or both of its branches were involved, and the ligature was applied to the right carotid, four proved fatal. For aneurisms of the carotid alone, the right was tied in five instances with one death ; the left carotid in two instances with one fatal termination.

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